



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS–R2–ES–2013–0022]

[4500030113]

RIN 1018–AZ35

### Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-headed Gartersnake

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, propose to designate critical habitat for the northern Mexican gartersnake (*Thamnophis eques megalops*) and narrow-headed gartersnake (*Thamnophis rufipunctatus*) in Arizona and New Mexico, under the Endangered Species Act of 1973, as amended (Act). If we finalize this rule as proposed, it would extend the Act's protections to these species' habitats. The effect of this regulation is to conserve northern Mexican and narrow-headed gartersnake habitat under the Act.

**DATES:** We will accept comments received or postmarked on or before [INSERT DATE 60

**DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**].

**ADDRESSES:** You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: <http://www.regulations.gov>. Search for Docket No. FWS–R2–ES–2013–0022, which is the docket number for this rulemaking. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R2–ES–2013–0022; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We request that you send comments **only** by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Information Requested** section below for more information).

The coordinates or plot points or both from which the critical habitat maps are generated are included in the administrative record for this rulemaking and are available at <http://www.fws.gov/southwest/es/arizona>, <http://www.regulations.gov> at Docket No. FWS–R2–

ES-2013-0022, and at the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this rulemaking will also be available at the Fish and Wildlife Service website and Field Office set out above, and may also be included in the preamble of this proposal and/or at *<http://www.regulations.gov>*.

**FOR FURTHER INFORMATION CONTACT:** Steve Spangle, Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021; telephone: 602-242-0210; facsimile: 602-242-2513. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

## **SUPPLEMENTARY INFORMATION:**

### **Executive Summary**

**Why we need to publish a rule.** Under the Act, once a species is determined to be an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. Additionally, critical habitat shall be designated, to the maximum extent prudent and determinable, for any species determined to be an endangered or threatened species under the Act. Designations and revisions of critical habitat can only be completed by

issuing a rule. Elsewhere in today's **Federal Register**, we propose to list the northern Mexican and narrow-headed gartersnakes as threatened species under the Act.

**This rule consists of:** A proposed rule for designation of critical habitat for northern Mexican and narrow-headed gartersnakes. These gartersnakes are proposed for listing under the Act. This rule proposes designation of critical habitat necessary for the conservation of the species.

**The basis for our action.** Under the Act, when a species is proposed for listing, to the maximum extent prudent and determinable, we must designate critical habitat for the species. These species are proposed for listing as threatened. Therefore, we propose to designate critical habitat for the northern Mexican gartersnake in Greenlee, Graham, Apache, La Paz, Mohave, Yavapai, Navajo, Gila, Coconino, Cochise, Santa Cruz, Pima, and Pinal Counties in Arizona, as well as in Grant and Catron Counties in New Mexico, and critical habitat for the narrow-headed gartersnake in Greenlee, Graham, Apache, Yavapai, Navajo, Gila, and Coconino Counties in Arizona, as well as in Grant, Hidalgo, Sierra, and Catron Counties in New Mexico.

**We will seek peer review.** We are seeking comments from knowledgeable individuals with scientific expertise to review our analysis of the best available science and application of that science and to provide any additional scientific information to improve this proposed rule. Because we will consider all comments and information received during the comment period, our final determinations may differ from this proposal.

## Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible.

Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as “critical habitat” under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threats outweighs the benefit of designation such that the designation of critical habitat is not prudent.

(2) Specific information on:

(a) The amount and distribution of northern Mexican or narrow-headed gartersnakes and their habitat;

(b) What may constitute “physical or biological features essential to the conservation of the species,” within the geographical range currently occupied by the species;

(c) Where these features are currently found;

(d) Whether any of these features may require special management considerations or protection;

(e) What areas, that were occupied at the time of listing (or are currently occupied) and

that contain features essential to the conservation of the species, should be included in the designation and why; and

(f) What areas not occupied at the time of listing are essential for the conservation of the species and why.

(3) Land use designations and current or planned activities in the areas occupied by the species or proposed to be designated as critical habitat, and possible impacts of these activities on this species and proposed critical habitat.

(4) Any foreseeable economic, national security, or other relevant impacts that may result from designating any area that may be included in the final designation. We are particularly interested in any impacts on small entities, and the benefits of including or excluding areas from the proposed designation that are subject to these impacts.

(5) Whether our approach to designating critical habitat could be improved or modified in any way to provide for greater public participation and understanding, or to assist us in accommodating public concerns and comments.

(6) The likelihood of adverse social reactions to the designation of critical habitat and how the consequences of such reactions, if likely to occur, would relate to the conservation and regulatory benefits of the proposed critical habitat designation.

(7) If considered for exclusion from critical habitat designation under section 4(b)(2) of

the Act, documentation that describes how lands are managed for wildlife and habitat and how that management specifically benefits either or both the northern Mexican or narrow-headed gartersnake or their prey bases.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you send comments **only** by the methods described in the **ADDRESSES** section.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review.

However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *<http://www.regulations.gov>*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *<http://www.regulations.gov>*, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Previous Federal Actions**

All previous Federal actions are described in the proposal to list the northern Mexican and narrow-headed gartersnakes as threatened species under the Act published elsewhere in today's **Federal Register**.

### **Background**

Critical habitat is defined in section 3 of the Act as:

- (1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features
  - (a) Essential to the conservation of the species and
  - (b) Which may require special management considerations or protection; and



(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of

critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographic area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical and biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type, etc.) that are essential to the conservation of the species. Primary constituent elements are the elements of physical or biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographic area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species, but that was not occupied at the time of listing, may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographic area occupied by a species only when a designation limited to its range would be inadequate to ensure the

conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is

unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

#### *Prudency Determination*

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or

(2) Such designation of critical habitat would not be beneficial to the species.

There is currently no imminent threat of take attributed to collection or vandalism for either of these species, and identification and mapping of critical habitat is not expected to initiate any such threat. In the absence of finding that the designation of critical habitat would increase threats to a species, if there are any benefits to a critical habitat designation, then a prudent finding is warranted. Here, the potential benefits of designation include: (1) Triggering consultation under section 7 of the Act, in new areas for actions in which there may be a Federal nexus where it would not otherwise occur because, for example, it is or has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential features and areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species. Therefore, because we have determined that the designation of critical habitat would not likely increase the degree of threat to the species and may provide some measure of benefit, we find that designation of critical habitat is prudent for the northern Mexican and narrow-headed gartersnakes.

#### *Critical Habitat Determinability*

Having determined that designation is prudent, under section 4(a)(3) of the Act, we must find whether critical habitat for the northern Mexican and narrow-headed gartersnakes is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

(i) Information sufficient to perform required analyses of the impacts of the designation is lacking, or

(ii) The biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We reviewed the best available scientific and commercial information pertaining to the biological needs of the species and habitat characteristics where the species are located. Based on this information, we conclude that sufficient information is known regarding the species' needs and habitats to determine critical habitat for the northern Mexican and narrow-headed gartersnakes.

#### *Physical or Biological Features*

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographic area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;

- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographic, and ecological distributions of a species.

We derived the specific physical or biological features (PBFs) required for the northern Mexican and narrow-headed gartersnakes from the best available scientific and commercial information available, including research of these species' habitat, ecology, and life history as described below. Additional insight is provided by Rosen and Schwalbe (1988, pp. 14–48), Degenhardt *et al.* (1996, pp. 317–319, 326–328), Rossman *et al.* (1996, pp. 55–116, 171–177, 241–248), and Ernst and Ernst (2003, pp. 391–393, 416–419). We have determined that the following physical or biological features are essential for northern Mexican and narrow-headed gartersnakes:

#### Space and Physical Habitat Requirements for Individual and Population Growth and for Normal Behavior

Both the northern Mexican and narrow-headed gartersnakes depend on the presence of water, primarily for the maintenance of their primary aquatic prey bases, not because their own physiology requires an aquatic environment. The northern Mexican gartersnake is a riparian obligate and occurs chiefly in streams, rivers, cienegas, stock tanks, and spring sources that are often found within large-river riparian woodlands and forests and streamside gallery forests (defined as well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass) (Hendrickson and Minckley 1984, p. 131; Rosen and Schwalbe

1988, pp. 14–16; Arizona Game and Fish Department 2001, p. 2). Northern Mexican gartersnakes occur at elevations from 130 to 8,497 feet (ft) (40 to 2,590 meters (m)) (Rossman *et al.* 1996, p. 172), and in a wide range of biotic communities, including Sonoran Desertscrub at the lower elevations, through Semidesert Grassland, Interior Chaparral, and Madrean Evergreen Woodland and into the lower reaches of Petran Montane Conifer Forest as elevation increases (Brennan and Holycross 2006, p. 122). Narrow-headed gartersnakes are widely considered to be one of the most aquatic gartersnake species (Rossman *et al.* 1996, p. 246), and are strongly associated with clear, rocky streams, using predominantly pool and riffle habitat that includes cobbles and boulders (Rosen and Schwalbe 1988, pp. 33–34; Degenhardt *et al.* 1996, p. 327; Rossman *et al.* 1996, p. 246). Narrow-headed gartersnakes occur at elevations from approximately 2,300–8,200 ft (700 m–2,500 m), inhabiting Petran Montane Conifer Forest, Great Basin Conifer Woodland, Interior Chaparral, and the Arizona Upland subdivision of Sonoran Desertscrub communities (Rosen and Schwalbe 1988, p. 33; Brennan and Holycross 2006, p. 122; Burger 2008).

Northern Mexican gartersnakes employ a variety of strategies when foraging for prey. Rosen and Schwalbe (1988, p. 21) observed: (1) Aquatic and terrestrial ambush; (2) aquatic foraging in riffles, vegetation mats, and in open water (such as pool habitat, stock tanks, etc.); and (3) opportunistic capitalization on transitory concentrations of prey. These observations suggest that areas with slow riffles, pools, and backwater habitat are important for prey acquisition, because the prey of northern Mexican gartersnakes are largely aquatic and the snakes themselves need to remain somewhat stabilized to allow for striking behaviors. Narrow-headed gartersnakes often forage underwater, using concealment and ambush behaviors within and



between boulder and cobble complexes along the bottom of streams (Rosen and Schwalbe 1988; p. 39). Hibbitts and Fitzgerald (2005, p. 364) described their hunting technique in greater detail, which included anchoring their body with their tail around rocks on the bottom of streams and orienting themselves in position with the current, with their head and neck exposed to the force of the water and the body unanchored on the substrate to allow for forward directed strikes. Narrow-headed gartersnakes are believed to be mainly visual hunters (Hibbitts and Fitzgerald 2005, p. 364) and heavily dependent on visual cues when foraging, based on comparative analyses among other species of gartersnakes (de Queiroz 2003, p. 381). However, foraging activity that occurs during the monsoon season, which is characterized by turbid water conditions, suggests they also use chemosensory abilities to direct strikes. This information suggests that the presence of rock structure along the bottom of streams is important to narrow-headed gartersnakes in compensating for the inertia of flow and for providing opportunities for camouflage-based ambush. However, Fitzgerald (1986; Table 4) also found narrow-headed gartersnakes foraging in stream and river reaches characterized as having sandy substrates. These observations suggest a more opportunistic nature of foraging behavior that may be based more on the presence of prey than the type of substrate.

Both northern Mexican and narrow-headed gartersnakes are largely dependent on native fish as a primary source of food, but have been observed using nonnative, soft-rayed fish species as prey on occasion; for narrow-headed gartersnakes, fish are the principle prey item (Rosen and Schwalbe 1988, pp. 18, 38–39; Degenhardt *et al.* 1996, p. 328; Rossman *et al.* 1996, p. 247; Nowak 2006, p. 22). Therefore, habitat-based attributes that are important for the survival of fish prey species are equally important for the survival of northern Mexican and narrow-headed

gartersnakes. Many species of native and nonnative soft-rayed fish require unregulated flows (or flooding) for: (1) Removing excess sediment from some portions of the stream; (2) removing predatory nonnative, spiny-rayed fish species from a given area; and (3) increasing prey species diversity. Flows fluctuate seasonally, with snowmelt causing spring pulses and occasional floods, and late-summer or monsoonal rains producing floods of varying intensity and duration. These high flows likely rejuvenate spawning and foraging habitat for native and nonnative, soft-rayed fish (Propst *et al.* 1986, p. 3), break-up embedded bottom materials (Mueller 1984, p. 355), stimulate spawning, and enhance recruitment of native species by eliminating or reducing populations of harmful nonnative species (Stefferd and Rinne 1996a, p. 80), such as spiny-rayed fish. Flooding also allows for the scouring of sand and gravel in riffle areas, which reduces the degree of embeddedness of cobble and boulder substrates (Britt 1982, p. 45). Typically, sediment is carried along the bed of a stream and deposited at the downstream, undersurface side of cobbles and boulders. Over time, this can result in the filling of cavities under cobbles and boulders (Rinne 2001, p. 69). Flooding removes the extra sediment, and the cavities created under cobbles by the scouring action of the flood waters provide enhanced opportunities for spawning of native fish, as well as foraging opportunities, particularly for narrow-headed gartersnakes.

In addition to aquatic habitat, northern Mexican and narrow-headed gartersnakes rely on terrestrial habitat for thermoregulation, gestation, shelter, protection from predators, immigration, emigration, and brumation (cold-season dormancy). The northern Mexican gartersnake also uses terrestrial habitat for foraging opportunities when primary prey items, such as leopard frogs and native fish, are uncommon or absent from aquatic habitats. Rosen (1991,

pp. 308–309) found that northern Mexican gartersnakes spent approximately 60 percent of their time moving, 13 percent of their time basking on vegetation, 18 percent of their time basking on the ground, and 9 percent of their time under surface cover. Foraging may occur spontaneously and opportunistically during any of these behaviors. In studying the Mexican gartersnake, Drummond and Marcías-García (1983, pp. 24, 35) found individuals wandering hundreds of meters away from water, perhaps in response to a decline or disappearance of the prey base. Observation records for northern Mexican gartersnakes from semi-remote livestock tanks and spring sources suggest the species moves across the local landscape as part of its foraging ecology. Rosen and Schwalbe (1988, p. 47) suggested that vegetation such as knotgrass, deergrass, sacaton, cattails, tules, and spikerush were important to the northern Mexican gartersnake, as well as the presence of rock piles. Boyarski (2011, p. 3) found that four of five telemetered northern Mexican gartersnakes over-wintered along a hillside “immediately south” of hatchery ponds where they spent the majority of their time during the surface-active season, but the distance of those specific over-wintering sites was not disclosed. However, Rosen and Schwalbe (1988, p. 27) report observing northern Mexican gartersnakes at a distance of 330 ft (100 m) away from permanent water.

Important terrestrial habitat components for the narrow-headed gartersnake include cobbles, boulders, and bankside shrub vegetation for basking and foraging (Fleharty 1967, pp. 215–216; Rosen and Schwalbe 1988, p. 48; Ernst and Ernst 2003, p. 418). In the Black River and Oak Creek in Arizona, the majority of narrow-headed gartersnakes captured were observed under rocks or shoreline debris, which may indicate these habitat components are ecologically important (Brennan and Rosen 2009, pp. 7, 11). In order of preference, Jennings and Christman

(2011, pp. 14, 20) found that narrow-headed gartersnakes used rocks, logs or stumps, and debris jams as cover. Narrow-headed gartersnake detections appear to correlate with the presence of large willows growing along the streambank, which are used for basking (Fernandez and Rosen 1996, p. 70). Holycross *et al.* (2006, p. 51) found that willows overhanging the stream channel are particularly important for adult narrow-headed gartersnakes. The greater need of narrow-headed gartersnakes to thermoregulate at higher elevations makes optimal basking sites, such as shrubs and snags, essential (Rosen and Schwalbe 1988, p. 34). Pregnant female narrow-headed gartersnakes are rarely encountered near streams, apparently moving away from water during gestation, in favor of the higher thermal environs of rock piles (Rosen and Schwalbe 1988, pp. 33–34, 48). Telemetry data presented in Nowak (2006, pp. 17–18) suggest that terrestrial habitat is important to narrow-headed gartersnakes; home ranges were often set up perpendicular to the stream channel, while others were parallel to the channel. This orientation of home ranges likely indicates the species uses both active and inactive channels, depending on the activity. Such channels are typically found within 600 ft (182.9 m) of active stream channels. For example, it is ecologically disadvantageous for an individual gartersnake to brumate within the bankfull boundary of an active stream because of the risk of flooding, and subsequent drowning, during the cold-season dormancy period. This hypothesis is supported by the findings of Nowak (2006, pp. 19–21), which found telemetered narrow-headed gartersnakes using crevices in rock walls or large rock outcrops as over-wintering sites, some as far as 650 ft (200 m) away from the stream channel. Additionally, micro-sites chosen as cover for gartersnakes may be artificial or natural; Nowak (2006, p. 19) reported observing narrow-headed gartersnakes commonly using such items such as rock foundations and retaining walls, chimneys, and old water pipes under house foundations, vegetation thickets, burrows, boulders, and downed logs. The largest home range

documented by Jennings and Christman (2011, p. 18) for narrow-headed gartersnakes was 239,077 square feet (22,211 square meters), but home range sizes in this study were considered to be underestimated by the authors.

Therefore, based on the information above, we identify the presence of aquatic habitats to support individual and population growth, and support normal behavior, and the presence of terrestrial habitats in appropriate proximity to occupied aquatic habitats to support individual and population growth, and support normal behavior, to be physical or biological features for these species.

#### Biotic Community Requirements for Individual and Population Growth

The success of northern Mexican and narrow-headed gartersnake populations appears to be uniquely tied to the presence of adequate native prey populations, and, in some cases, nonnative prey species consisting of larval and juvenile bullfrogs, as well as soft-rayed, nonnative fish species (Rosen and Schwalbe 1988, pp. 18, 20, 44; Holycross *et al.* 2006, p. 23). Generally, the diet of the northern Mexican gartersnake consists predominantly of amphibians and fishes, but other invertebrates and vertebrate species may also be used opportunistically (Gregory *et al.* 1980, pp. 87, 90–92; Rosen and Schwalbe 1988, pp. 18, 20; Holm and Lowe 1995, pp. 30–31; Degenhardt *et al.* 1996, p. 318; Rossman *et al.* 1996, p. 176; Manjarrez 1998). Marcías-García and Drummond (1988, pp. 129–134) found that adult northern Mexican gartersnakes in Hidalgo, Mexico, primarily fed on aquatic vertebrates, whereas juveniles often fed on invertebrates, such as earthworms and leeches. Narrow-headed gartersnakes specialize on

fish (primarily native fish and, secondarily, nonnative, soft-rayed species, such as trout) as their principle prey item (Rosen and Schwalbe 1988, pp. 38–39; Nowak 2006, pp. 22–23; Degenhardt *et al.* 1996, p. 328; Rossman *et al.* 1996, p. 247). Detailed information on the diet of northern Mexican and narrow-headed gartersnakes is presented in the proposed rule to list both species as threatened under the Act, which is published elsewhere in today’s **Federal Register**.

Both the northern Mexican and narrow-headed gartersnakes have been documented as highly vulnerable to effects from nonnative species as a result of their competition with gartersnakes for prey and effects from direct predation on the gartersnakes themselves (Rosen and Schwalbe 1988, pp. 28–31, 32, 44–45). We conducted a broad review of all available scientific and commercial data, and have determined that nonnative species, such as bullfrogs, crayfish, and spiny-rayed fish, in the families Centrarchidae and Ictaluridae, continue to be the most significant threat to northern Mexican and narrow-headed gartersnakes throughout their respective ranges. Our analysis of the roles that the declines in the anuran prey base, declines in the native fish prey base, bullfrog predation, crayfish interactions, and effects from nonnative, spiny-rayed fish play with regard to the observed declines of the northern Mexican and narrow-headed gartersnakes is presented in detail in the proposed rule to list both species as threatened under the Act, which is published elsewhere in today’s **Federal Register**.

#### *Primary Constituent Elements for Northern Mexican and Narrow-headed Gartersnakes*

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of northern Mexican and narrow-headed

gartersnakes in areas occupied at the time of listing, focusing on the features' primary constituent elements (PCEs). We consider primary constituent elements to be the elements of physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

#### *Northern Mexican Gartersnake's PCEs*

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to northern Mexican gartersnakes are:

(1) Aquatic or riparian habitat that includes:

- a. Perennial or spatially intermittent streams of low to moderate gradient that possess appropriate amounts of in-channel pools, off-channel pools, or backwater habitat, and that possess a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads; or
- b. Lentic wetlands such as livestock tanks, springs, and cienegas; and
- c. Shoreline habitat with adequate organic and inorganic structural complexity to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities (e.g., boulders, rocks, organic debris such as downed trees or logs, debris jams, small mammal burrows, or leaf litter); and
- d. Aquatic habitat with characteristics that support a native amphibian prey base, such as

salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations.

(2) Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation (extended inactivity).

(3) A prey base consisting of viable populations of native amphibian and native fish species.

(4) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

#### *Narrow-headed Gartersnake's PCEs*

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to narrow-headed gartersnakes are:

(1) Stream habitat, which includes:

a. Perennial or spatially intermittent streams with sand, cobble, and boulder substrate and



low or moderate amounts of fine sediment and substrate embeddedness, and that possess appropriate amounts of pool, riffle, and run habitat to sustain native fish populations;

b. A natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads;

c. Shoreline habitat with adequate organic and inorganic structural complexity (e.g., boulders, cobble bars, vegetation, and organic debris such as downed trees or logs, debris jams), with appropriate amounts of shrub- and sapling-sized plants to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities; and

d. Aquatic habitat with no pollutants or, if pollutants are present, levels that do not affect survival of any age class of the narrow-headed gartersnake or the maintenance of prey populations.

(2) Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation.

(3) A prey base consisting of viable populations of native fish species or soft-rayed, nonnative fish species.

(4) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of narrow-headed gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

### *Special Management Considerations or Protection*

When designating critical habitat, we assess whether the specific areas within the geographic area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection.

All areas proposed for designation as critical habitat will require some level of management to address the current and future threats to northern Mexican and narrow-headed gartersnakes and to maintain or restore the PCEs. Special management within proposed critical habitat will be needed to ensure these areas provide adequate water quantity, quality, and permanence or near permanence; cover (particularly in the presence of harmful nonnative species); an adequate prey base; and absence of or low numbers of harmful nonnative species that can affect population persistence. Activities that may be considered adverse to the conservation benefits of proposed critical habitat include those which: (1) Completely dewater or reduce the amount of water to unsuitable levels in proposed critical habitat; (2) result in a significant reduction of protective cover within proposed critical habitat when harmful nonnative species are present; (3) remove or significantly alter structural terrestrial features of proposed critical habitat that alter natural behaviors such as thermoregulation, brumation, gestation, and foraging; (4) appreciably diminish the prey base; and (5) directly promote increases in harmful nonnative species populations or result in the introduction of harmful nonnative species.

Common examples of these activities may include, but are not limited to, various types of development, channelization, diversions, road construction, erosion control, bank stabilization,

wastewater discharge, enhancement or expansion of human recreation opportunities, fish community renovations, and stocking of nonnative, spiny-rayed fish species or promotion of policies that directly or indirectly introduce harmful nonnative species as bait.

The activities listed above are just a subset of examples that have the potential to affect critical habitat and PCEs if they are conducted within designated units; however, some of these activities, when conducted appropriately, may be compatible with maintenance of adequate PCEs.

#### *Criteria Used To Identify Critical Habitat*

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. We review available information pertaining to the habitat requirements of the species. In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—are necessary to ensure the conservation of the species. We are not currently proposing to designate any areas outside the geographic area considered occupied by the northern Mexican or narrow-headed gartersnake because occupied areas are distributed in several subbasins and currently provide a distribution and configuration of habitat areas sufficient for the conservation of these species.

To identify areas proposed for critical habitat for the northern Mexican and narrow-headed gartersnakes, we used a variety of sources which included riparian species survey reports,

museum records, heritage data from State wildlife agencies, peer-reviewed literature, agency reports, interviews with species experts, and regional Geographic Information System (GIS) coverages. Some information sources were used heavily in determining the current and historical distributions of northern Mexican and narrow-headed gartersnakes such as Fitzgerald (1986, entire), Rosen and Schwalbe (1988, entire), Rosen *et al.* (2001, entire), and Holycross *et al.* (2006, entire), as they comprise the majority of rangewide survey information for these species. Hellekson (2012a, pers. comm.) was an important source of information pertaining to narrow-headed gartersnake status in New Mexico. In addition to reviewing gartersnake-specific survey reports, we also focused on survey reports for fish and amphibians as they captured important data on the existing community ecology that affects the status of these gartersnakes within their range.

Critical habitat for both gartersnake species is being proposed in areas considered currently occupied. Survey information for both species is significantly lacking in many streams, and both species of gartersnake are cryptic, secretive, difficult to detect, quick to escape underwater, and capable of persisting in low or very low population densities that make positive detections nearly impossible in structurally complex habitat. Therefore, we considered factors such as the date of the last known records of either species in an area, as well as records of one or more native prey species. We used all records for each species that were dated 1980 or later because the 1980s marked the first systematic survey efforts for these species across their ranges (see Rosen and Schwalbe (1988, entire) and Fitzgerald (1986, entire)) and previous records were often dated several decades prior and may not as accurately represented the likelihood for occupation in current times. Additionally, in evaluating whether a site should be considered

currently occupied by these gartersnake species, a record of a native prey species suggests that a source of prey may still be available to gartersnakes in areas invaded by harmful nonnative species. This provides evidence that either gartersnake may still likely occur in a given area if other sensitive, native, aquatic or riparian species are also present, despite limited or negative survey data. Specifically, for both species, we considered a stream or geographic area as occupied if it is within the historical range of the species, contains suitable habitat, and meets both of the following: (1) Has a last known record for either species dated 1980 or later, and (2) has at least one native prey species also present.

The shape, size, and scope of proposed critical habitat can be evaluated in terms of its length (number of stream miles), width (lateral extent, in feet), or area (number of acres). With respect to length (in proposed designations based on flowing streams), the proposed areas were designed to provide sufficient aquatic and terrestrial habitat for normal behaviors of northern Mexican and narrow-headed gartersnakes of all age classes. In addition, with respect to width, we evaluated the lateral extent (terrestrial space) necessary to support the PCEs for northern Mexican and narrow-headed gartersnakes. The resulting designations take into account the naturally dynamic nature of riverine systems, floodplains, and riparian habitat (including adjacent upland areas) that are an integral part of these gartersnakes' ecology. For example, riparian areas are seasonally flooded habitats (i.e., wetlands) that are major contributors to a variety of functions vital to the gartersnakes' fish prey base within the associated stream channel (Brinson *et al.* 1981, pp. 2–61, 2–69, 2–72, 2–75, 2–84 through 2–85; Federal Interagency Stream Restoration Working Group 1998, p. 2–61). Riparian areas filter runoff, absorb and gradually release floodwaters, recharge groundwater, maintain streamflow, protect stream banks

from erosion, and provide shade and cover for fish and other aquatic species; all of these functions contribute to the physical quality of gartersnake habitat.

Healthy riparian and adjacent upland areas help ensure water courses maintain the habitat important for aquatic species (e.g., see USFS 1979, pp. 18, 109, 158, 264, 285, 345; Middle Rio Grande Biological Interagency Team 1993, pp. 64, 89, 94; Castelle *et al.* 1994, pp. 279–281) that are prey for northern Mexican and narrow-headed gartersnakes, as well as for the snakes themselves. Habitat quality within the mainstem river channels in the historical range of the northern Mexican and narrow-headed gartersnakes is intrinsically related to the character of the floodplain and the associated tributaries, side channels, and backwater habitats that contribute to important habitat features that provide gartersnakes opportunities for foraging and basking in these reaches. We have determined that a relatively intact riparian area, along with periodic flooding in a generally natural pattern, is important for maintaining the PCEs necessary for long-term conservation of the northern Mexican and narrow-headed gartersnakes, as well as their primary prey species.

The lateral extent (width) of riparian corridors fluctuates considerably between a stream's headwaters and its mouth. The appropriate width of riparian terrestrial habitat to protect stream function has been the subject of several studies and varies depending on the specific function (Castelle *et al.* 1994, pp. 879–881). Most Federal and State agencies generally consider a zone 75 to 150 ft (23 to 46 m) wide on each side of a stream to be adequate (Natural Resource Conservation Service 1998, pp. 2–3; Moring *et al.* 1993, p. 204; Lynch *et al.* 1985, p. 164), although widths as wide as 500 ft (152 m) have been recommended for achieving flood

attenuation benefits (U.S. Army Corps 1999, pp. 5–29). In most instances, however, adequate riparian space is primarily intended to reduce detrimental impacts to the stream from sources outside the river channel, such as pollutants, in adjacent areas. Consequently, while a riparian corridor 75 to 150 ft (23 to 46 m) in width may protect water quality and provide some level of riparian habitat protection, a wider area would provide full protection of riparian habitat because the stream itself can move within the floodplain in response to high flow events, and also provide terrestrial space required by northern Mexican and narrow-headed gartersnakes to engage in normal behaviors such as foraging, basking, gestation, brumation, establishing home ranges, dispersal, and so forth. Using telemetry data (Nowak 2006, pp. 19–21), the farthest distance a narrow-headed gartersnake has been detected from water is 650 ft (200 m), while Rosen and Schwalbe (1988, p. 27) report observing a northern Mexican gartersnake at a distance of 330 ft (100 m) away from permanent water. Based on the literature, we expect the majority of terrestrial activity for both species occurs within 600 ft (182.9 m) of permanent water in lotic habitat.

We believe a 600-ft (182.9-m) lateral extent to either side of bankfull stage will sufficiently protect the majority of important terrestrial habitat; provide brumation, gestation, and dispersal opportunities; and reduce the impacts of high flow events, thereby providing adequate protection to proposed critical habitat areas. We believe this width is necessary to accommodate stream properties such as meandering and high flows, and ensure these designations contain ample terrestrial space such that features essential to the conservation of these gartersnakes and their prey species can occur naturally. Bankfull stage is defined as the upper level of the range of channel-forming flows, which transport the bulk of available sediment over time. Bankfull

stage is generally considered to be that level of stream discharge reached just before flows spill out onto the adjacent floodplain. The discharge that occurs at bankfull stage, in combination with the range of flows that occur over a length of time, govern the shape and size of the river channel (its geomorphology) (Rosgen 1996, pp. 2–2 to 2–4; Leopold 1997, pp. 62– 63, 66). The use of bankfull stage and 600 ft (182.9 m) on either side recognizes the naturally dynamic nature of riverine systems, recognizes that floodplains are an integral part of the stream ecosystem, and contains sufficient terrestrial space and associated features essential to the conservation of the northern Mexican and narrow-headed gartersnakes. Bankfull stage is not an ephemeral feature, meaning it does not disappear. Bankfull stage can always be determined and delineated for any stream we have designated as critical habitat. We acknowledge that the bankfull stage of any given stream may change depending on the magnitude of a flood event, but it is a definable and standard measurement for stream systems. Unlike trees, cliff faces, and other immovable habitat elements, stream systems provide habitat that is in constant change. Following high flow events, stream channels can move from one side of a canyon to the opposite side, for example.

Designating critical habitat based on the location of the stream on a specific date is problematic for maintaining important habitat elements. For example, the area within such a designation could transition from providing aquatic habitat and prey to become a dry channel in a short period of time as a result of a high flow event and the subsequent shift in the location of the channel.

We determined the 600-ft (182.9-m) lateral extent for several reasons. Although we considered using either the 100-year or 500-year floodplain, as defined by the Federal



Emergency Management Agency, we found that the information was not readily available from the Federal Emergency Management Agency or from the U.S. Army Corps of Engineers for remote areas we are proposing for designation. Therefore, we selected the 600-ft (182.9-m) lateral extent, rather than some other delineation, for four biological reasons: (1) The biological integrity and natural dynamics of the river system and associated riparian habitat are maintained within this area (*i.e.*, the floodplain and its riparian vegetation provide space for natural flooding patterns and latitude for necessary natural channel adjustments to maintain appropriate channel morphology and geometry, store water for slow release to maintain base flows, provide protected side channels and other protected areas, and allow the river to meander within its main channel in response to large flow events); (2) conservation of the adjacent riparian area also helps to provide important nutrient recharge to benefit the food web and protection from sediment and pollutants; (3) vegetated lateral zones are widely recognized as providing a variety of aquatic habitat functions and values (*e.g.*, aquatic habitat for prey such as fish and other aquatic organisms and detritus for aquatic food webs) and help improve or maintain local water quality (see U.S. Army Corps of Engineers' Final Notice of Issuance and Modification of Nationwide Permits, March 9, 2000, 65 FR 12818); and (4) a 600-ft (182.9-m) buffer contributes to the functioning of a river or stream system and provides adequate terrestrial space for normal northern Mexican and narrow-headed gartersnake behaviors, thereby supporting the PCEs needed for suitable northern Mexican and narrow-headed gartersnake habitat as described by the best available scientific and commercial information.

When determining proposed critical habitat boundaries, we made every effort to avoid including large developed areas such as lands covered by buildings, pavement, and other

structures because such lands lack physical or biological features for the northern Mexican and narrow-headed gartersnakes. While reptiles, including gartersnakes, may use artificial materials for cover, areas that have been significantly altered by construction-related development are not generally suitable for gartersnakes or their prey species. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification, unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We are proposing for designation of critical habitat lands that we have determined are occupied at the time of listing and contain sufficient elements of physical or biological features to support life-history processes essential for the conservation of the species.

Units are proposed for designation based on sufficient elements of physical or biological features being present to support the northern Mexican and narrow-headed gartersnakes' life-history processes. Some units contain all of the identified elements of physical or biological features and support multiple life-history processes. Some segments contain only some elements of the physical or biological features necessary to support the northern Mexican and narrow-headed gartersnakes' particular use of that habitat.

The critical habitat designation is defined by the maps, as modified by any accompanying regulatory text, presented at the end of this document in the **Proposed Regulation Promulgation** section. We include more detailed information on the proposed boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> at Docket No. FWS–R2–ES–2013–0022, on our Internet site at <http://www.fws.gov/southwest/es/arizona>, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT** above).

### **Proposed Critical Habitat Designation**

We are proposing 14 units as critical habitat for the northern Mexican gartersnake and 6 units as critical habitat for the narrow-headed gartersnake. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the northern Mexican and narrow-headed gartersnakes. The 14 units we propose as critical habitat for the northern Mexican gartersnake include lands in the following areas: (1) Gila River Mainstem; (2) Mule Creek; (3) Bill Williams River; (4) Agua Fria River Subbasin; (5) Upper Salt River Subbasin; (6) Tonto Creek; (7) Verde River Subbasin; (8) Upper Santa Cruz River Subbasin; (9) Redrock Canyon; (10) Buenos Aires National Wildlife Refuge; (11) Cienega Creek Subbasin; (12) San Pedro River Subbasin; (13) Babocomari River Subbasin; and (14) the San Bernardino National Wildlife Refuge (SBNWR). The six units we propose as critical habitat for the narrow-headed gartersnake are: (1) Upper Gila River Subbasin; (2) Middle Gila River

Subbasin; (3) San Francisco River Subbasin; (4) Salt River Subbasin; (5) Tonto Creek Subbasin; and (6) Verde River Subbasin. All units for both species are considered occupied. It is important to recognize that while all units for both species are considered occupied, the majority of populations in these proposed critical habitat units are currently considered likely not viable into the future. We have concluded that 83 percent of the northern Mexican gartersnake's populations in the United States and 76 percent of the narrow-headed gartersnake's populations occur at low densities and are likely not viable. Please see Appendix A (available at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2013-0022) for detailed information on occupancy status.

TABLE 3a. Land ownership for proposed critical habitat units for the northern Mexican gartersnake. [Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land Ownership by Type				Size of Unit
		Federal	State	Tribal	Private	
Upper Gila River		10,845 ac (4,389 ha)	467 ac (189 ha)		9,822 ac (3,975 ha)	21,135 ac (8,553 ha)
<b>Unit Total</b>		10,845 ac (4,389 ha)	467 ac (189 ha)		9,822 ac (3,975 ha)	21,135 ac (8,553 ha)
Mule Creek		1,327 ac (537 ha)			1,253 ac (507 ha)	2,579 ac (1044 ha)
<b>Unit Total</b>		1,327 ac			1,253 ac	2,579 ac

		(537 ha)			(507 ha)	(1044 ha)
Bill Williams River		3,820 ac (1,546 ha)	516 ac (209 ha)		1,076 ac (435 ha)	5,412 ac (2,190 ha)
<b>Unit Total</b>		3,820 ac (1,546 ha)	516 ac (209 ha)		1,076 ac (435 ha)	5,412 ac (2,190 ha)
Agua Fria River Subbasin	Agua Fria River Mainstem	3,313 ac (1,341 ha)	918 ac (372 ha)		2,758 ac (1,116 ha)	6,989 ac (2,828 ha)
	Little Ash Creek	877 ac (355 ha)			80 ac (32 ha)	957 ac (387 ha)
<b>Unit Total</b>		4,010 ac (1,696 ha)	918 ac (372 ha)		2,838 ac (1,148 ha)	7,946 ac (3,215 ha)
Upper Salt River Subbasin	Black River	2,632 ac (1,065 ha)		13,760 ac (5,569 ha)		16,392 ac (6,634 ha)
	Big Bonito Creek			5,826 ac (2358 ha)		5,826 ac (2358 ha)
<b>Unit Total</b>		2,632 ac (1,065 ha)		19,586 ac (7,927 ha)		22,218 ac (8,991 ha)
Tonto Creek		7,766 ac (3,143 ha)			1,170 ac (474 ha)	8,936 ac (3,616 ha)
<b>Unit Total</b>		7,766 ac (3,143 ha)			1,170 ac (474 ha)	8,936 ac (3,616 ha)
Verde River Subbasin	Upper Verde River	13,903 ac (5,626 ha)	1,209 ac (489 ha)	192 ac (78 ha)	5,223 ac (2,114 ha)	20,526 ac (8,307 ha)
	Oak Creek	1,873 ac (758 ha)	274 ac (111 ha)		3,386 ac (1,370 ha)	5,533 ac (2,239 ha)

	Spring Creek	2,572 ac (1,041 ha)	188 ac (76 ha)		371 ac (150 ha)	3,131 ac (1,267 ha)
<b>Unit Total</b>		18,348 ac (7,425 ha)	1,671 ac (676 ha)	192 ac (78 ha)	8,980 ac (3,634 ha)	29,191 ac (11,813 ha)
Upper Santa Cruz River Subbasin		77,387 ac (31,318 ha)	3,969 ac (1,606 ha)		32,538 ac (13,168 ha)	113,895 ac (46,092 ha)
<b>Unit Total</b>		77,387 ac (31,318 ha)	3,969 ac (1,606 ha)		32,538 ac (13,168 ha)	113,895 ac (46,092 ha)
Redrock Canyon		1,423 ac (576 ha)			549 ac (222 ha)	1,972 ac (798 ha)
<b>Unit Total</b>		1,423 ac (576 ha)			549 ac (222 ha)	1,972 ac (798 ha)
Buenos Aires National Wildlife Refuge		117,313 ac (47,475 ha)				117,313 ac (47,475 ha)
<b>Unit Total</b>		117,313 ac (47,475 ha)				117,313 ac (47,475 ha)
Cienega Creek Subbasin	Cienega Creek	24 ac (10 ha)	1,078 ac (436 ha)		11 ac (4 ha)	1,113 ac (450 ha)
	Las Cienegas National Conservation Area	39,913 ac (16,152 ha)	5,105 ac (2,066 ha)		1 ac ( $<1$ ha)	45,020 ac (18,219 ha)
	Cienega Creek Natural Preserve				4,260 ac (1,724 ha)	4,260 ac (1,724 ha)

<b>Unit Total</b>		39,937 ac (16,162 ha)	6,183 ac (2,502 ha)		4,272 ac (1,728 ha)	50,393 ac (20,393 ha)
San Pedro River Subbasin	San Pedro River	6,973 ac (2,822 ha)	1,163 ac (470 ha)	76 ac (31 ha)	14,456 ac (5,850 ha)	22,669 ac (9,174 ha)
	Bear Canyon Creek	639 ac (259 ha)			383 ac (155 ha)	1,022 ac (414 ha)
<b>Unit Total</b>		7,612 ac (3,081 ha)	1,163 ac (470 ha)	76 ac (31 ha)	14,839 ac (6,005 ha)	23,690 ac (9,587 ha)
Babocomari River Subbasin	Babocomari River/Cienega	625 ac (253 ha)	56 ac (23 ha)		2,773 ac (1,122 ha)	3,454 ac (1,398 ha)
	Post Canyon	431 ac (175 ha)			363 ac (147 ha)	795 ac (322 ha)
	O'Donnell Canyon	124 ac (50 ha)			274 ac (111 ha)	398 ac (161 ha)
	Turkey Creek	888 ac (359 ha)	2 ac (1 ha)		788 ac (319 ha)	1,678 ac (679 ha)
	Appleton-Whittell Research Ranch	5,283 ac (2,138 ha)			2,515 ac (1,018 ha)	7,798 ac (3,156 ha)
	Canelo Hills Cienega Preserve				213 ac (86 ha)	213 ac (86 ha)
<b>Unit Total</b>		7,351 ac (2,975 ha)	58 ac (24 ha)		6,926 ac (2,803 ha)	14,334 ac (5,801 ha)
San Bernardino		2,387 ac				2,387 ac

National Wildlife Refuge		(966 ha)				(966 ha)
<b>Total</b>		302,338 ac (122,352 ha)	14,966 ac (6,057 ha)	19,855 ac (8,035 ha)	84,263 ac (34,100 ha)	421,423 ac (170,544 ha)

Note: Numbers may not sum due to rounding.

TABLE 3b. Land ownership for proposed critical habitat units for narrow-headed gartersnakes.

[Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land Ownership by Type				Size of Unit
		Federal	State	Tribal	Private	
Upper Gila River Subbasin	Gila River	10,845 ac (4,389 ha)	467 ac (189 ha)		9,822 ac (3,975 ha)	21,135 ac (8,553 ha)
	East Fork Gila River	2,929 ac (1,185 ha)			649 ac (263 ha)	3,579 ac (1,148 ha)
	West Fork Gila River	4,793 ac (1,940 ha)			376 ac (152 ha)	5,169 ac (2,092 ha)
	Middle Fork Gila River	4,875 ac (1,973 ha)			89 ac (36 ha)	4,964 ac (2,009 ha)
	Black Canyon	3,465 ac (1,402 ha)			38 ac (15 ha)	3,503 ac (1,418 ha)



	Diamond Creek	2,995 ac (1,212 ha)			550 ac (223 ha)	3,545 ac (1,435 ha)
	Gilita Creek	1,704 ac (690 ha)				1,704 ac (690 ha)
	Iron Creek	1,731 ac (701 ha)				1,731 ac (701 ha)
	Little Creek	2,223 ac (900 ha)			13 ac (5 ha)	2,236 ac (905 ha)
	Turkey Creek	2,338 ac (946 ha)				2,338 ac (946 ha)
<b>Unit Total</b>		37,898 ac (15,338 ha)	467 ac (189 ha)		11,537 ac (4,669 ha)	49,903 ac (20,195 ha)
Middle Gila River Subbasin	Gila River	422 ac (171 ha)			11 ac (4 ha)	432 ac (175 ha)
	Eagle Creek	2,016 ac (816 ha)	54 ac (22 ha)	2,258 ac (1,035 ha)	3,754 ac (1,519 ha)	8,382 ac (3,392 ha)
<b>Unit Total</b>		2,438 ac (987 ha)	54 ac (22 ha)	2,258 ac (1,035 ha)	3,765 ac (1,523 ha)	8,814 ac (3,567 ha)
San Francisco River Subbasin	San Francisco River	15,661 ac (6,338 ha)	216 ac (88 ha)		7,300 ac (2,954 ha)	23,178 ac (9,380 ha)
	Blue River	6,484 ac (2,624 ha)			948 ac (383 ha)	7,432 ac (3,007 ha)
	Campbell Blue Creek	2,888 ac 1,169 ha)			120 ac (49 ha)	3,008 ac (1,217 ha)
	Dry Blue Creek	1,320 ac (534 ha)				1,320 ac (534 ha)
	South Fork Negrito	1,383 ac			100 ac	1,483 ac

	Creek	(560 ha)			(40 ha)	(600 ha)
	Saliz Creek	852 ac (345 ha)			247 ac (100 ha)	1,099 ac (445 ha)
	Tularosa River	1,875 ac (759 ha)			2,852 ac (1,154 ha)	4,728 ac (1,913 ha)
	Whitewater Creek	2,282 ac (923 ha)			547 ac (221 ha)	2,289 ac (1,145 ha)
<b>Unit Total</b>		32,745 ac (13,252 ha)	216 ac (88 ha)		12,114 ac (4,901 ha)	45,075 ac (18,241 ha)
Upper Salt River Subbasin	Salt River	5,342 ac (2,162 ha)		7,502 ac (3,036 ha)	33 ac (13 ha)	12,877 ac (5,211 ha)
	White River			2,588 ac (1,047 ha)		2,588 ac (1,047 ha)
	Canyon Creek	1,182 ac (478 ha)		6,160 ac (2,493 ha)	3 ac (1 ha)	7,346 ac (2,973 ha)
	Carrizo Creek	158 ac (64 ha)		8,875 ac (3,592 ha)		9,033 ac (1,229 ha)
	Cibecue Creek			6,669 ac (2,699 ha)		6,669 ac (2,699 ha)
	Diamond Creek			3,117 ac (1,261 ha)		3,117 ac (1,261 ha)
	Black River	2,632 ac (1,065 ha)		13,752 ac (5,565 ha)		16,384 ac (6,630 ha)
<b>Unit Total</b>		9,314 ac (3,769 ha)		48,663 ac (19,693 ha)	36 ac (14 ha)	58,014 ac (23,478 ha)
Tonto Creek Subbasin	Haigler Creek	2,831 ac (1,146 ha)			206 ac (83 ha)	3,037 ac (1229 ha)

	Houston Creek	1,747 ac (707 ha)			299 ac (121 ha)	2,046 ac (828 ha)
	Tonto Creek	7,017 ac (2,840 ha)			696 ac (282 ha)	7,712 ac (3,121 ha)
<b>Unit Total</b>		11,595 ac (4,693 ha)			1,201 ac (486 ha)	12,795 ac (5,178 ha)
Verde River Subbasin	Verde River	12,098 ac (4,896 ha)	1,209 ac (489 ha)	192 ac (78 ha)	5,223 ac (2114 ha)	18,721 ac (7576 ha)
	Oak Creek	3,340 ac (1,352 ha)	328 ac (133 ha)		3,701 ac (1,498 ha)	7,369 ac (2,982 ha)
	West Fork Oak Creek	2,137 ac (865 ha)				2,137 ac (865 ha)
	East Verde River	6,682 ac (2,704 ha)			678 ac (274 ha)	7,360 ac (2,978 ha)
<b>Unit Total</b>		24,257 ac (9,817 ha)	1,537 ac (622 ha)	192 ac (78 ha)	9,602 ac (3,886 ha)	35,586 ac (14,401 ha)
<b>Total</b>		118,247 ac (47,853 ha)	2,275 ac (921 ha)	51,415 ac (20,807 ha)	38,253 ac (15,480 ha)	210,189 ac (85,060 ha)

Note: Numbers may not sum due to rounding.

The following are brief descriptions of all units and our reasoning as to why they meet the definition of critical habitat for the northern Mexican gartersnake or the narrow-headed gartersnake.

#### Northern Mexican Gartersnake

### *Upper Gila River Unit*

The Upper Gila River Unit is generally located in southwestern New Mexico in the Gila Wilderness of the Gila National Forest in Hidalgo and Grant Counties, New Mexico, and eastern Arizona in Graham County. This unit consists of a total of 21,135 acres (8,553 ha) along 148 stream mi (239 km) of proposed critical habitat along the Gila River mainstem. Land ownership or land management within this unit consists of lands managed by the U.S. Forest Service, New Mexico Department of Game and Fish, State Trust lands, and private ownership. The identified area described in the Upper Gila River Unit has records since 1980 for northern Mexican gartersnakes, and is within the geographical area currently occupied by the species. We are proposing the area in this unit because it is occupied by the species and because it contains essential physical or biological features that may require special management considerations or protection. The following narrative describes the area proposed as critical habitat in the Upper Gila River Unit.

We are proposing to designate 21,135 acres (8,553 ha) of critical habitat along 148.2 stream mi (238.6 km) of the upper Gila River, from its confluence with the San Francisco River in Graham County, Arizona, upstream to its confluence with East Fork Gila River and Black Canyon in Catron County, New Mexico. The Upper Gila River Unit is primarily privately owned, with additional parcels managed by the Gila National Forest, the New Mexico Department of Game and Fish, and the Arizona and New Mexico State Land Departments. Several reaches of the Gila River in New Mexico have been adversely affected by channelization

and diversions, which have reduced or eliminated baseflow. As a whole, however, this unit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species and improving the status of ranid frog populations. Lands within The Nature Conservancy's Gila Riparian Preserve in this unit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Upper Gila River Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. Some reaches of the Gila River have been adversely affected by channelization and water diversions. There remains the potential for the construction of Hooker Dam in the reach of the Gila River above Mogollon Creek and below Turkey Creek as part of the Central Arizona Project, which would adversely affect both the physical habitat for northern Mexican gartersnakes as well as their prey base, but this project remains in deferment status. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; channelization; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

### *Mule Creek Unit*

The Mule Creek Unit is generally located in southwestern New Mexico in the vicinity of Mule Creek, New Mexico (Grant and Catron Counties). This unit consists of a total of 2,579 acres (1,044 ha) along 19 stream mi (30 km) of proposed critical habitat along Mule Creek. Land ownership or land management within this unit consists of lands managed by the U.S. Forest Service and private ownership. The identified area described in the Mule Creek Unit has records for northern Mexican gartersnakes since 1980, and is considered as being within the geographical area currently occupied by the species. We are proposing this area under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains essential physical or biological features that may require special management considerations or protection. The following narrative describes the area proposed as critical habitat in the Mule Creek Unit.

We are proposing to designate 2,579 acres (1,044 ha) of critical habitat along 18.7 stream mi (30.1 km) of Mule Creek, from its confluence with the San Francisco River, upstream to its origin northwest of North Sawmill Canyon in Grant and Catron Counties, New Mexico. The Mule Creek Subunit is managed by the Gila National Forest, with additional parcels under private ownership. Mule Creek supports native fish and supports an adequate amount of suitable aquatic and terrestrial habitat with the appropriate characteristics to support the northern Mexican gartersnake. However, the habitat quality is somewhat compromised by the presence of bullfrogs, which are known to have a negative association with northern Mexican gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or

low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including management to remove or reduce bullfrogs.

The Mule Creek Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

#### *Bill Williams River Unit*

The Bill Williams River Unit is generally located in western Arizona, northeast of Parker, Arizona, in La Paz and Mohave Counties. This unit consists of a total of 5,412 acres (2,190 ha) along 36 stream mi (58 km) of proposed critical habitat along the Bill Williams River, Arizona. We are proposing to designate the reach of the Bill Williams River running from its confluence with Lake Havasu, upstream to Alamo Lake Dam. The Bill Williams River Unit occurs on lands primarily managed by the U.S. Bureau of Land Management. Remaining land management and ownership includes the Bill Williams National Wildlife Refuge, U.S. Department of Defense lands, Arizona State Land Department, and private land owners. All identified areas described in this unit have records for northern Mexican gartersnakes since 1980, and all identified areas are considered as being within the geographical area currently occupied by the species. We are

proposing this unit under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains essential physical or biological features that may require special management considerations or protection. This unit contains adequate populations of lowland leopard frogs, but native fish appear to be absent. Crayfish and several species of nonnative, spiny-rayed fish maintain robust populations in this reach. Within this unit, PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics) are present, but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish, as well as the prevention of a bullfrog invasion.

The Bill Williams River Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit and flood-control projects.

#### *Agua Fria River Subbasin Unit*

The Agua Fria River Subbasin Unit is generally located in central Arizona, paralleling Interstate 17, just north of the Phoenix metropolitan area, in Yavapai County, Arizona. This unit consists of a total of 7,946 acres (3,215 ha) along 56 stream mi (91 km) of proposed critical



habitat along the Agua Fria River and Little Ash Creek. Land ownership or land management within this unit consists of lands managed by the U.S. Bureau of Land Management, U.S. Forest Service, State Trust lands, and private ownership. All identified areas described in the Agua Fria River Subbasin Unit have records since 1980 for northern Mexican gartersnakes, and all are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are essential for the conservation of the northern Mexican gartersnake. The following narratives describe all of the subunits proposed as critical habitat in the Agua Fria River Subbasin Unit.

Agua Fria River Mainstem Subunit. We are proposing to designate 6,989 acres (2,828 ha) of critical habitat along 49.1 stream mi (80.0 km) of the Agua Fria River mainstem, from its confluence with Squaw Creek east of Black Canyon City, upstream to its confluence with the unnamed drainage south of Highway 169 in Dewey, Arizona (Yavapai County). Also included in this subunit are 88 acres (36 ha) of the Arizona Game and Fish Department's Horseshoe Ranch property, which is located along the Agua Fria River at its confluence with Indian Creek. The Agua Fria River Mainstem Subunit is primarily privately owned or managed by the U.S. Bureau of Land Management, with additional parcels managed by the Arizona State Land Department. The Agua Fria River contains nonnative, soft-rayed fish and lowland leopard frogs as prey, and contains an adequate amount of suitable aquatic and terrestrial habitat with the appropriate characteristics to support the northern Mexican gartersnake. However, the dominance of crayfish, bullfrogs, and nonnative, spiny-rayed fish in some reaches negatively affects the proposed subunit's suitability for northern Mexican gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat

characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including management to remove or reduce crayfish, bullfrogs, and nonnative, spiny-rayed fish. Lands within the Arizona Game and Fish Department's Horseshoe Ranch property are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Little Ash Creek Subunit. We are proposing to designate 957 acres (387 ha) of critical habitat along 6.7 stream mi (10.7 km) of Little Ash Creek, from the confluence of Ash Creek, upstream to its confluence with an unnamed drainage east of the bridge over Dugas Road in Yavapai County, Arizona. The Little Ash Creek Subunit is primarily managed by the Prescott National Forest and U.S. Bureau of Land Management with additional parcels under Arizona State Land Department and private ownership. According to GIS analysis, Little Ash Creek supports populations of lowland leopard frogs and two species of native fish, and contains adequate amount of suitable aquatic and terrestrial habitat with the appropriate characteristics to support the northern Mexican gartersnake, but the dominance of crayfish, bullfrogs, and nonnative, spiny-rayed fish in some reaches negatively affects the suitability for northern Mexican gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including management against crayfish, bullfrogs, and nonnative, spiny-rayed fish.

The Agua Fria Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due primarily to competition with, and predation by, harmful nonnative species that are present in this unit and to a lesser extent human development of areas adjacent to proposed critical habitat.

#### *Upper Salt River Subbasin Unit*

The Upper Salt River Subbasin Unit is generally located along the Mogollon Rim in east-central Arizona, and includes portions of Gila, Graham, Apache, Navajo, and Greenlee Counties. The Upper Salt River Subbasin Unit largely includes remote, rural areas, generally under the ownership and management of tribal governments, specifically the White Mountain Apache and San Carlos Apache Tribes. This unit consists of a total of 22,218 acres (8,991 ha) along 156 stream mi (251 km) of proposed critical habitat along the Black River and Big Bonito Creek. Land ownership or land management within this unit consists of tribal lands and those managed by the U.S. Forest Service. All identified areas described in the Salt River Subbasin Unit have records since 1980 for northern Mexican gartersnakes, and all identified areas are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may

require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Upper Salt River Subbasin Unit.

Black River Subunit. We are proposing to designate 16,392 acres (6,634 ha) of critical habitat along 114.4 stream mi (184.0 km) of the Black River from its confluence with the Salt and White rivers, upstream to the confluence with the East and West Forks of the Black River. The Black River Drainage Subunit occurs in Apache, Gila, Graham, Greenlee, and Navajo Counties, Arizona. The Black River drainage is primarily owned by the White Mountain Apache and San Carlos Apache Tribes, with additional parcels managed by the Apache-Sitgreaves National Forest. Water in the Black River is diverted for use at the Morenci Mine, which may affect baseflow. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and PCE 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and possibly nonnative, spiny-rayed fish, as well as to maintain adequate base flows in the Black River. Lands owned by the White Mountain Apache and San Carlos Apache Tribes are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Big Bonito Creek Subunit. We are proposing to designate 5,826 acres (2,358 ha) of critical habitat along 41.5 stream mi (66.8 km) of Big Bonito Creek, from its confluence with the Black River east of the mouth of Sawmill Canyon, upstream to its origin southwest of Mount Baldy in the White Mountains, in Apache and Navajo Counties, Arizona. Big Bonito Creek is

solely owned by the White Mountain Apache Tribe. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish, as well as management to support a native prey base for northern Mexican gartersnakes. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Upper Salt River Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and largely contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. However, the 2011 Wallow Fire adversely affected a large proportion of the Black River drainage, and subsequent ash and sediment flows have likely resulted in a depressed fish community, which could stress resident northern Mexican gartersnake populations in the short to medium term. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

#### *Tonto Creek Unit*

The Tonto Creek Unit is generally located southeast of Payson, Arizona, and northeast of

the Phoenix metropolitan area, in Gila County. We are proposing to designate 8,936 acres (3,616 ha) of critical habitat along 65.1 stream mi (104.7 km) of Tonto Creek, from its confluence with Roosevelt Lake upstream to its origin northeast of Tonto Spring, south of Rim Road, in Gila County, Arizona. Tonto Creek occurs predominately on lands managed by the Tonto National Forest. The remaining landownership is private. Therefore, we are proposing this unit under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains sufficient amounts of the essential physical or biological features that may require special management considerations or protection. Some reaches along Tonto Creek experience seasonal drying as a result of regional groundwater pumping, while others are affected by diversions or existing or planned flood control projects. Development along private reaches of Tonto Creek may also affect terrestrial characteristics of northern Mexican gartersnake habitat. Mercury has been detected in fish samples within Tonto Creek, and further research is necessary to determine if mercury is bioaccumulating in the resident food chain. In general, this unit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, bullfrogs, and nonnative, spiny-rayed fish, as well as improve base flows.

The Tonto Creek Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition

with, and predation by, harmful nonnative species that are present in this unit; water diversions; flood-control projects; and development of areas adjacent to or within proposed critical habitat.

### *Verde River Subbasin Unit*

The Verde River Subbasin Unit is generally located southwest of Paulden, Arizona, and northwest of Payson, Arizona, in Coconino, Gila, and Yavapai Counties. This unit consists of a total of 29,191 acres (11,813 ha) along approximately 201 stream mi (323 km) of proposed critical habitat along the Verde River, Oak Creek, and Spring Creek. Lands within this unit consist of federally managed lands, State Trust lands and other State-managed lands, tribal lands, and privately owned lands. All identified areas described in the Verde River Subbasin Unit have records for northern Mexican gartersnakes, and all identified areas are considered as being currently within the geographical area occupied by the species. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Verde River Subbasin Unit.

Upper Verde River Subunit. We are proposing to designate 20,526 acres (8,307 ha) of critical habitat along 139.8 stream mi (224.9 km) of the Verde River, from its confluence with Horseshoe Reservoir, upstream to its confluence with Sullivan Lake, in Gila and Yavapai Counties, Arizona. The Verde River occurs predominantly on lands managed by the U.S. Forest Service on the Prescott, Tonto, and Coconino National Forests. Remaining land management

and ownership includes the Arizona Game and Fish Department, Arizona State Parks, Arizona State Trust, Yavapai Apache Tribe, and private land owners. Proposed groundwater pumping of the Big Chino Aquifer may adversely affect future baseflow in the Verde River, and therefore PCE 1. Development along the Verde River has eliminated habitat along portions of the Verde River through the Verde Valley. In general, this subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, bullfrogs, and nonnative, spiny-rayed fish, as well as ensuring adequate flow is retained in the Verde River. Lands along the Verde River included in the Arizona Game and Fish Departments' Upper Verde Wildlife Area, The Nature Conservancy's Verde Springs Preserve and Verde Valley property, lands owned by the Yavapai Apache Tribe, and lands owned by the Salt River Project and managed under their Horseshoe-Bartlett and Roosevelt HCPs are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Oak Creek Subunit. We are proposing to designate 5,533 acres (2,239 ha) of critical habitat along 38.5 stream mi (62.0 km) of Oak Creek, from its confluence with the Verde River south of Cornville, upstream to Midgely Bridge at the confluence with Wilson Canyon, in Coconino County, Arizona. Also included in this subunit are 149 acres (60 ha) of the Arizona Game and Fish Department's Bubbling Ponds and Page Springs State Fish Hatcheries, which are adjacent to each other, and occur along Oak Creek, upstream of its confluence with Spring



Creek. The Oak Creek subunit occurs predominately on privately owned lands or lands managed by the Coconino National Forest. Remaining lands are managed by Arizona Game and Fish Department and Arizona State Parks. This reach of lower Oak Creek is largely dominated by crayfish, bullfrogs, and nonnative, spiny-rayed fish. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. Special management may be required to maintain or develop the physical or biological features, including managing for native prey species and eliminating or reducing crayfish, bullfrog, and nonnative, spiny-rayed fish populations. Lands along lower Oak Creek included within the Arizona Game and Fish Department's Bubbling Ponds and Page Springs State Fish Hatcheries are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Spring Creek Subunit. We are proposing to designate 3,131 acres (1,267 ha) of critical habitat along 22.5 stream mi (36.2 km) of Spring Creek, from its confluence with the Oak Creek upstream to its origin southwest of Buck Ridge, in Yavapai County, Arizona. Spring Creek occurs predominately on lands managed by U.S. Forest Service on the Tonto and Coconino National Forests. Remaining lands are Arizona State Trust and privately owned lands. Spring Creek contains populations of lowland leopard frogs and several species of native fish which serve as the prey base for northern Mexican gartersnakes. However, crayfish have been observed as abundant in this subunit. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient.

Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish.

The Verde River Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; existing and proposed groundwater pumping potentially resulting in drying of habitat; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

#### *Upper Santa Cruz River Subbasin Unit*

The Upper Santa Cruz River Subbasin Unit is generally located in southeastern Arizona, east of Nogales, southeast of Patagonia, and southwest of Sierra Vista, in the San Rafael Valley, in Santa Cruz and Cochise Counties, Arizona. This unit consists of springs, seeps, streams, stock tanks, and terrestrial space (overland areas) in between these features within a total of 113,895 acres (46,092 ha) of proposed critical habitat in the San Rafael Valley, including portions of Parker and Scotia canyons of the Huachuca Mountains, Arizona. For the streams within this unit, we are proposing the reach of Parker Canyon that includes 5.8 stream mi (9.3 km) from Duquesne Road south of Loop Road, upstream to and including Parker Canyon Lake. The reach of Scotia Canyon we are proposing as critical habitat includes 3.7 stream mi (5.9 km) from its

confluence with an unnamed drainage at the junction with Bodie Canyon, upstream to its origin west of the Coronado National Forest-Fort Huachuca Boundary. The upper Santa Cruz River occurs within the San Rafael Valley, flowing south into Mexico. We are proposing 13.8 stream mi (22.2 km) of the upper Santa Cruz River, from the International Border, upstream to its headwaters at the top of Sheep Ridge Canyon. The Upper Santa Cruz River Subbasin Unit occurs on lands primarily managed by the Coronado National Forest, with remaining land management under the Arizona State Parks Department. This unit also contains private lands. All identified areas described in this unit have records for northern Mexican gartersnakes, and all identified areas are considered as being currently within the geographical area occupied by the species. Therefore, we are proposing this unit under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains sufficient amounts of the essential physical or biological features that may require special management considerations or protection.

This unit contains adequate populations of Chiricahua and lowland leopard frogs, as well as native fish species in various locations and densities, with the former being actively recovered in Scotia Canyon. Bullfrogs and nonnative, spiny-rayed fish are also known to occur at various densities within this unit, and Parker Canyon Lake is managed as a warm-water sport fishery. Crayfish are also likely to occur in various locations and densities within this unit. Within this unit, PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics) and 3 (prey base) are generally met, but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including continuing to promote the recovery or expansion of native leopard frogs and fish, and eliminating or reducing harmful nonnative species. The San Rafael Ranch is being

considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* section below).

The Upper Santa Cruz River Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit and potential effects from future high-intensity wildfires.

#### *Redrock Canyon Unit*

We are proposing to designate 1,971 acres (798 ha) of critical habitat along 14.0 stream mi (22.5 km) of Redrock Canyon, from its confluence with Sonoita Creek, upstream to its origin north of Meadow Valley in the Canelo Hills, in Santa Cruz County. Redrock Canyon occurs predominately on lands managed by the Coronado National Forest with remaining land in private ownership. The area proposed along Redrock Canyon is within the area considered occupied by the northern Mexican gartersnake. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection.

Redrock Canyon supports four species of native fish, and Chiricahua leopard frogs and

Sonora tiger salamanders have been reported. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs and the prevention of potential invasions from nonnative, spiny-rayed fish. Lands within The Nature Conservancy's Patagonia-Sonoita Creek Preserve in this unit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Redrock Canyon Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit.

#### *Buenos Aires National Wildlife Refuge Unit*

The Buenos Aires National Wildlife Refuge Unit is generally located in southern Arizona, northwest of Nogales and south of Three Points, in Pima County, Arizona. This unit consists of a total of 117,335 acres (47,484 ha) of proposed critical habitat, including springs, seeps, streams, stock tanks, and terrestrial space in between these features within the Buenos Aires National Wildlife Refuge. The Buenos Aires National Wildlife Refuge Unit occurs on

lands solely managed by the U.S. Fish and Wildlife Service. This unit is considered as being currently within the geographical area occupied by the species. Therefore, we are proposing this unit under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains sufficient amounts of the essential physical or biological features that may require special management considerations or protection.

This unit has been a focal point for the recovery of Chiricahua leopard frogs, providing prey for the northern Mexican gartersnake in a core area of stock tanks in the central region of the Refuge. Chiricahua leopard frogs also likely disperse from this area into other areas within the Refuge. Bullfrogs and crayfish remain a concern in Arivaca Cienega and Arivaca Creek. While not part of this unit, Arivaca Lake is operated as a warm-water sport fishery, and nonnative, spiny-rayed fish may be washed down and persist below the lake dam after overflow events. Within this unit, PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base) are generally present, but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, bullfrogs, and nonnative, spiny-rayed fish, as well as the prevention of a bullfrog invasion in Chiricahua leopard frog recovery core areas.

The Buenos Aires National Wildlife Refuge Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management

consideration due to competition with, and predation by, harmful nonnative species that are present in this unit.

### *Cienega Creek Subbasin Unit*

The Cienega Creek Subbasin Unit is generally located in southern Arizona, east of the Santa Rita Mountains, north of the Canelo Hills, and west of the Whetstone Mountains, in Pima and Santa Cruz Counties. This unit consists of springs, seeps, streams, stock tanks, and terrestrial space in between these features within a total of 50,393 acres (20,393 ha) of proposed critical habitat in the Las Cienegas National Conservation Area and Cienega Creek Natural Preserve. Also included in this unit is 7.1 stream mi (11.4 km) of Cienega Creek that occur outside of these specific ownership areas. The Cienega Creek Subbasin Unit occurs on lands primarily managed by the U.S. Bureau of Land Management and the Arizona State Land Department, with remaining lands under private ownership. All identified areas are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Cienega Creek Subbasin Unit.

Cienega Creek Subunit. We are proposing to designate 1,113 acres (450 ha) of critical habitat along 7.1 stream mi (11.4 km) of Cienega Creek, from the northern boundary of the Las Cienegas National Conservation Area to the southern boundary of Cienega Creek Natural

Preserve in Pima County, Arizona. The Cienega Creek Subunit occurs on lands managed by the Arizona State Land Department in addition to a small amount of private land. Native fish and both Chiricahua and lowland leopard frog populations provide prey for northern Mexican gartersnakes, and recent, ongoing bullfrog eradication in the area reduces the threat of bullfrogs within this subunit. This subunit contains sufficient physical or biological features, including all PCEs. However, special management may be required to maintain or develop the physical or biological features, including preventing the invasion or reinvasion of bullfrogs.

Las Cienegas National Conservation Area Subunit. We are proposing to designate critical habitat for a total of 45,020 acres (18,219 ha) of springs, seeps, streams, stock tanks, and terrestrial space in between these features within the Las Cienegas National Conservation Area in Pima County, including portions of Cienega Creek and Empire Gulch that occur within the Las Cienegas National Conservation Area. The Las Cienegas National Conservation Area is managed by the U.S. Bureau of Land Management, although it includes some Arizona State Trust Lands. Native fish and both Chiricahua and lowland leopard frog populations provide prey for northern Mexican gartersnakes, and recent, ongoing bullfrog eradication in the area reduces the threat of bullfrogs within this subunit. This subunit contains sufficient physical or biological features, including all PCEs. However, special management may be required to maintain or develop the physical or biological features, including preventing the invasion or reinvasion of bullfrogs.

Cienega Creek Natural Preserve Subunit. We are proposing to designate critical habitat for a total of 4,260 acres (1,724 ha) of springs, seeps, streams, stock tanks, and terrestrial space



in between these features within the Cienega Creek Natural Preserve in Pima County, Arizona, including the reach of Cienega Creek that occurs within the Cienega Creek Natural Preserve. The Cienega Creek Natural Preserve is owned and managed by Pima County. Native fish and lowland leopard frog populations provide prey for northern Mexican gartersnakes, and recent, ongoing bullfrog eradication in the area reduces the threat of bullfrogs within this subunit. This subunit contains sufficient physical or biological features, including all PCEs. However, special management may be required to maintain or develop the physical or biological features, including preventing the invasion or reinvasion of bullfrogs. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Cienega Creek Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to ongoing and regional threat of bullfrogs.

#### *San Pedro River Subbasin Unit*

The San Pedro River Subbasin Unit is generally located in southeastern Arizona, east of Sierra Vista, Tucson, and Florence and west Douglas, Wilcox, and Safford, in Cochise, Pima, and Pinal Counties. This unit consists of a total of 23,690 acres (9,587 ha) along 165 stream mi (266 km) of proposed critical habitat along the San Pedro River and Bear Creek. Land

ownership or land management within this unit consists of lands managed by the U.S. Bureau of Land Management, Coronado National Forest, Arizona State Land Department, San Carlos Apache Tribe, and privately owned lands. All identified areas described in the San Pedro River Subbasin Unit have records for northern Mexican gartersnakes, and all identified areas are considered as being currently within the geographical area occupied by the species. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the San Pedro River Subbasin Unit.

San Pedro River Subunit. We are proposing to designate 22,669 acres (9,174 ha) of critical habitat along 158.4 stream mi (254.9 km) of the San Pedro River from its confluence with the Gila River at Winkelman, upstream to the International Border, in Cochise, Pima, and Pinal Counties, Arizona. The San Pedro River Subunit occurs predominately on privately owned lands, with remaining lands managed by the U.S. Bureau of Land Management. Native fish and lowland leopard frogs occur throughout the San Pedro River and provide a prey base for northern Mexican gartersnakes, with prey population densities increasing in the downstream direction. Crayfish, bullfrogs, and nonnative, spiny-rayed fish occur predominately upstream of the Interstate 10 crossing. In general, this subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features,

including the elimination or reduction of harmful nonnative species. Lands in this subunit that are owned or under conservation easement with The Nature Conservancy as conservation preserves, lands owned by the Salt River Project and managed under their Horseshoe-Bartlett and Roosevelt HCPs, as well as lands owned by the San Carlos Apache Tribe, are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Bear Canyon Creek Subunit. We are proposing to designate 1,022 acres (414 ha) of critical habitat along 7.1 stream mi (11.3 km) of Bear Canyon Creek, from the International Border, upstream to its origin south of Granite Peak in the Huachuca Mountains, in Cochise County, Arizona. The Bear Canyon Creek Subunit occurs predominately on lands managed by the Coronado National Forest with remaining land in private ownership. Native fish comprise the fishery of Bear Canyon Creek, and GIS analysis suggests that native leopard frogs may also occur in limited density. Crayfish are also present. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and the establishment of secure leopard frog populations.

The San Pedro River Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the

species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit.

### *Babocomari River Subbasin Unit*

The Babocomari River Subbasin Unit is generally located in southeastern Arizona, east of Santa Rita Mountains, north of the Canelo Hills and Huachuca Mountains, south of the Whetstone Mountains, and west of the San Pedro River, in Santa Cruz and Cochise Counties. This unit consists of springs, seeps, streams, stock tanks, and terrestrial space in between these features within a total of 14,334 acres (5,801 ha) of proposed critical habitat in the Canelo Hills Cienega Preserve and Appleton-Whittell Research Ranch as well as along a total of 45 stream mi (72 km) of portions of the Babocomari River, Post Canyon, O'Donnell Canyon, and Turkey Creek. Land ownership or management within this unit consists of lands managed by the U.S. Bureau of Land Management, Coronado National Forest, Arizona State Land Department, and privately owned lands. All identified areas described in the Babocomari River Subbasin Unit have records for northern Mexican gartersnakes, and all identified areas are considered as being currently within the geographical area occupied by the species. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Babocomari River Subbasin Unit.

Babocomari River/Cienega Subunit. We are proposing to designate 3,454 acres (1,398 ha) of critical habitat along approximately 24.4 stream mi (39.2 km) of the Babocomari River from its confluence with the San Pedro River northwest of Fairbank, upstream to its confluence with an unnamed drainage south of the railroad and southeast of Elgin, in Cochise and Santa Cruz Counties, Arizona. The Babocomari River Subunit occurs predominately on privately owned lands, with remaining lands managed by the U.S. Bureau of Land Management. Crayfish, bullfrogs, and nonnative, spiny-rayed fish all occur within this subunit at various densities, reducing the likelihood of maintaining a suitable native prey base for northern Mexican gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species and reestablishment of native prey species.

Post Canyon Subunit. We are proposing to designate 795 acres (322 ha) of critical habitat along approximately 5.7 stream mi (9.1 km) of Post Canyon, from the western boundary of the Appleton-Whittell Research Ranch, upstream to Post Well at the top of Post Canyon, in Santa Cruz County, Arizona. The Post Canyon Subunit occurs largely on privately owned lands as well as those managed by the Coronado National Forest.

Lowland leopard frogs and, perhaps, Chiricahua leopard frogs provide prey for northern Mexican gartersnakes in Post Canyon. Native fish may also occur due to a connection with nearby habitat that native fish are known to occupy. Crayfish occur in Post Canyon, and

nonnative, spiny-rayed fish, as well as bullfrogs, are known from the vicinity and may be present. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and the prevention of potential bullfrog and nonnative, spiny-rayed fish invasions. Lands owned by the Appleton-Whittell Research Ranch within this subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

O'Donnell Canyon Subunit. We are proposing to designate 398 acres (161 ha) of critical habitat along approximately 2.5 stream mi (4.0 km) of O'Donnell Canyon, between the southern boundary of the Appleton-Whittell Research Ranch upstream to the northern boundary of the Canelo Hills Cienega Preserve, and then from the southern boundary of the Canelo Hills Cienega Preserve upstream to its confluence with Pauline and Middle canyons, in Santa Cruz County, Arizona. The O'Donnell Canyon Subunit occurs predominantly on privately owned lands and those managed by the Coronado National Forest. The area proposed along O'Donnell Canyon is within the area considered occupied by the northern Mexican gartersnake.

Populations of native fish and Chiricahua leopard frogs provide a prey base for northern Mexican gartersnakes in O'Donnell Canyon, but crayfish and nonnative, spiny-rayed fish may be present. Bullfrogs inhabit the region and present a threat of invasion. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2

(terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish, as well as the prevention of potential bullfrog invasions. Lands owned by the Appleton-Whittell Research Ranch and the Canelo Hills Cienega Preserve within this subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Turkey Creek Subunit. We are proposing to designate 1,678 acres (679 ha) of critical habitat along approximately 12.0 stream mi (19.4 km) of Turkey Creek, from its confluence with the Babocomari River, upstream to the northern boundary of the Appleton-Whittell Research Ranch, and then from the southwestern boundary of the Appleton-Whittell Research Ranch to its origin at an unnamed pond east of State Highway 83 and south of Forest Road 201, in Santa Cruz and Cochise Counties. The Turkey Creek Subunit occurs predominantly on privately owned lands and those managed by the Coronado National Forest.

Turkey Creek historically supported two species of native fish, which could still remain and supplement possible resident amphibian prey sources. One bullfrog was detected in 2004 within Turkey Creek, but no crayfish or nonnative, spiny-rayed fish species are thought to currently occur there. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) may be deficient. However, special management may be required to maintain or develop the physical or biological features,

including preventing harmful nonnative species from becoming established and reintroducing native fish and leopard frogs into Turkey Creek. Lands owned by the Appleton-Whittell Research Ranch within this subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Appleton-Whittell Research Ranch Subunit. We are proposing to designate critical habitat on approximately 7,798 acres (3,156 ha) of springs, seeps, streams, stock tanks, and terrestrial space in between these features within the Appleton-Whittell Research Ranch, in Santa Cruz County, Arizona. Portions of Post Canyon, O'Donnell Canyon, and Turkey Creek are included in this subunit. The Appleton-Whittell Research Ranch subunit occurs on privately owned lands, as well as lands managed by the Bureau of Land Management and Coronado National Forest. The management of the Appleton-Whittell Research Ranch is overseen by The Audubon Society. Native fish and native leopard frog populations occur throughout Ranch and provide prey for northern Mexican gartersnakes. However, crayfish, bullfrogs, and nonnative, spiny-rayed fish occur regionally and are an ongoing threat to northern Mexican gartersnakes in this area. This subunit contains sufficient physical or biological features, including all PCEs. However, special management may be required to maintain or develop the physical or biological features, including preventing the invasion of harmful nonnative species. Private lands in this subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Canelo Hills Cienega Preserve Subunit. We are proposing to designate critical habitat on



approximately 213 acres (86 ha) of springs, seeps, streams, stock tanks, and terrestrial space in between these features within the Canelo Hills Cienega Preserve, in Santa Cruz County, Arizona. Portions of Post Canyon and O'Donnell Canyon are included within this subunit. The Canelo Hills Cienega Preserve includes lands owned by The Nature Conservancy, as well as other private lands under conservation easements with The Nature Conservancy. Native fish and leopard frogs may occur within this subunit. We do not have updated information on the status of harmful nonnative species in this subunit, but its management likely favors native species within the Preserve. Therefore, we conclude that this subunit contains all PCEs. However, special management may be required to maintain or develop the physical or biological features, including preventing harmful nonnative species from becoming established. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Babocomari River Subbasin Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit.

#### *San Bernardino National Wildlife Refuge (SBNWR) Unit*

The SBNWR Unit is generally located in extreme southeastern Arizona, east of Douglas

and west of the New Mexico border, and sharing its southern border with Mexico, in Cochise County, Arizona. This unit consists of a total of 2,387 acres (966 ha) of springs, seeps, streams, stock tanks, and terrestrial space in between these features, including the headwaters of the Yaqui River. The U.S. Fish and Wildlife Service is the sole land manager within this unit.

The SBNWR was a historical stronghold for northern Mexican gartersnakes, but the species has become rare in current times. Therefore, we are proposing this unit under section 3(5)(A)(i) of the Act because it is occupied by the species and because it contains sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The SBNWR contains records for five species of native fish as well as lowland and Chiricahua leopard frog populations, but the status of the latter is uncertain due to the presence of bullfrogs on the refuge. This unit contains an adequate amount of physically suitable aquatic and terrestrial habitat, with the appropriate characteristics to support the northern Mexican gartersnake. Within this unit, PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base) are generally present, but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs.

The SBNWR Unit is proposed as critical habitat for the northern Mexican gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, bullfrogs that are present in this unit.

## Narrow-headed Gartersnake

### *Upper Gila River Subbasin Unit*

The Upper Gila River Subbasin Unit is generally located southwestern New Mexico in the Gila Wilderness of the Gila National Forest in Catron, Grant, Hidalgo, and Sierra Counties, New Mexico, and eastern Arizona in Graham County. This unit consists of a total of 49,903 acres (20,195 ha) along 359 stream mi (578 km) of proposed critical habitat along the mainstem, East, West, and Middle Forks of the Gila River, Black Canyon, Diamond Creek, Gilita Creek, Iron Creek, Little Creek, and Turkey Creek. Land ownership or land management within this unit consists of lands managed by the U.S. Forest Service, U.S. Bureau of Land Management, National Park Service, New Mexico Department of Game and Fish, State Trust lands, and private ownership. All identified areas described in the Upper Gila River Subbasin Unit have records since 1980 for narrow-headed gartersnakes, and all identified areas are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Upper Gila River Subbasin Unit.

Gila River Subunit. We are proposing to designate 21,135 acres (8,553 ha) of critical habitat along 148.2 stream mi (238.6 km) of the Gila River mainstem, from its confluence with

the San Francisco River in Graham County, Arizona, through Hidalgo county, New Mexico, upstream to its confluence with East Fork Gila River and Black Canyon in Catron County, New Mexico. The mainstem Gila River Subunit contains primarily privately owned lands, as well as lands managed by the Gila National Forest, the New Mexico Department of Game and Fish, and the Arizona and New Mexico State Land Departments. Several reaches of the Gila River in New Mexico have been adversely affected by channelization and diversions, which have reduced or eliminated baseflow. As a whole, however, this subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species, as well as to maintain adequate base flow in the Gila River. Lands within The Nature Conservancy's Gila Riparian Preserve in this subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

East Fork Gila River Subunit. We are proposing to designate 3,579 acres (1,448 ha) of critical habitat along 27.6 stream mi (44.4 km) of the East Fork Gila River, from its confluence with the mainstem Gila River in Grant County, New Mexico, upstream to its confluence with Beaver Creek and Taylor Creek in Catron County, New Mexico. The East Fork Gila River Subunit is primarily managed by the Gila National Forest, with additional parcels under private ownership. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be

required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, bullfrogs, and nonnative, spiny-rayed fish.

West Fork Gila River Subunit. We are proposing to designate 5,169 acres (2,092 ha) of critical habitat along 37.2 stream mi (59.9 km) of the West Fork Gila River, from its confluence with the mainstem Gila River and East Fork Gila River in Grant County, New Mexico, upstream to its origin east of Center Baldy Peak in Catron County, New Mexico. The West Fork Gila River Subunit is primarily managed by the Gila National Forest with additional parcels under private ownership or managed by the National Park Service or the New Mexico Department of Game and Fish. Historically, the West Fork Gila River maintained large populations of bullfrogs and nonnative, spiny-rayed fish. As a result of ash and sediment flows following the 2012 Whitewater-Baldy Complex Fire, these harmful nonnative species may have been reduced (bullfrogs) or possibly eliminated (spiny-rayed fish). This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) may be deficient. Special management may be required to maintain or develop the physical or biological features, including the preventing the reinvasion of harmful nonnative species and the reestablishment of native prey lost as a result of the 2012 Whitewater-Baldy Complex Fire.

Middle Fork Gila River Subunit. We are proposing to designate 4,964 acres (2,009 ha) of critical habitat along 37.0 stream mi (59.5 km) of the Middle Fork Gila River, from its confluence with the West Fork Gila River in Catron County, New Mexico, upstream to its

confluence with Gilita Creek and Iron Creek in Catron County, New Mexico. The Middle Fork Gila River Subunit is primarily managed by the Gila National Forest with additional parcels managed by the New Mexico Department of Game and Fish. Historically, the West Fork Gila River maintained large populations of bullfrogs and nonnative, spiny-rayed fish. As a result of ash and sediment flows following the 2012 Whitewater-Baldy Complex Fire, these harmful nonnative species may have been reduced (bullfrogs) or possibly eliminated (spiny-rayed fish). This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) may be deficient. Special management may be required to maintain or develop the physical or biological features, including the preventing the reinvasion of harmful nonnative species and the reestablishment of native prey lost as a result of the 2012 Whitewater-Baldy Complex Fire.

Black Canyon Subunit. We are proposing to designate 3,503 acres (1,418 ha) of critical habitat along 25.8 stream mi (41.5 km) of Black Canyon, from its confluence with East Fork Gila River in Catron County, New Mexico, upstream to its confluence with Gilita Creek and Iron Creek in Catron County, New Mexico. Black Canyon is primarily managed by the Gila National Forest with additional parcels under private ownership. This area contains sufficient physical or biological features, including all PCEs. Special management may be required to maintain or develop the physical or biological features, including management against the invasion of harmful nonnative species.

Diamond Creek Subunit. We are proposing to designate 3,545 acres (1,435 ha) of critical

habitat along 25.4 stream mi (40.9 km) of Diamond Creek, from its confluence with East Fork Gila River in Catron County, New Mexico, upstream to its confluence with the unnamed drainage northeast of Turkey Park in Sierra County, New Mexico. The Diamond Creek Subunit is primarily managed by the Gila National Forest with additional parcels under private ownership. This area contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish.

Gilita Creek Subunit. We are proposing to designate 1,704 acres (690 ha) of critical habitat along 12.1 stream mi (19.5 km) of Gilita Creek, from its confluence with Middle Fork Gila River in Catron County, New Mexico, upstream to its confluence with the unnamed drainage in Turkey Cienega, south of Bear Wallow Lookout Road, in Catron County, New Mexico. The Gilita Creek Subunit is managed by the Gila National Forest. Several improved and unimproved road crossings occur along Gilita Creek, which may act as a source of sedimentation to the creek. However, this subunit appears to contain sufficient physical or biological features, including all PCEs. Special management may be required to maintain or develop the physical or biological features, including management against the invasion of harmful nonnative species, as well as to control erosion and sedimentation issues.

Iron Creek Subunit. We are proposing to designate 1,731 acres (701 ha) of critical habitat along 12.4 stream mi (19.9 km) of Iron Creek, from its confluence with Middle Fork Gila

River in Catron County, New Mexico, upstream to its confluence with the unnamed drainage southeast of Whitewater Baldy Peak in Catron County, New Mexico. The Iron Creek Subunit is managed by the Gila National Forest. This subunit was affected by ash and sediment flows resulting from the 2012 Whitewater-Baldy Complex Fire that have likely reduced the prey base for narrow-headed gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) is deficient. Special management may be required to maintain or develop the physical or biological features, including management against the invasion of harmful nonnative species and the reestablishment of a native prey base.

Little Creek Subunit. We are proposing to designate 2,236 acres (905 ha) of critical habitat along 16.8 stream mi (27.0 km) of Little Creek, from its confluence with West Fork Gila River in Catron County, New Mexico, upstream to the unnamed spring northwest of Granite Peak in Catron County, New Mexico. The Little Creek Subunit is primarily managed by the Gila National Forest with additional parcels managed by the New Mexico Department of Game and Fish. This subunit was affected by ash and sediment flows resulting from the 2011 Miller Fire that have likely reduced the prey base for narrow-headed gartersnakes. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs and the reestablishment of a native prey base.



Turkey Creek Subunit. We are proposing to designate 2,338 acres (946 ha) of critical habitat along 16.6 stream mi (26.7 km) of Turkey Creek, from its confluence with the Gila River mainstem in Grant County, New Mexico, upstream to its confluence with the unnamed drainage southwest of Granite Peak in Grant County, New Mexico. The Turkey Creek Subunit is managed by the Gila National Forest. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including management against the reinvasion of crayfish and bullfrogs.

The Upper Gila River Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. Some reaches of the Gila River have been adversely affected by channelization and water diversions. There remains the potential for the construction of Hooker Dam in the reach of the Gila River above Mogollon Creek and below Turkey Creek as part of the Central Arizona Project, which would adversely affect both the physical habitat for narrow-headed gartersnakes as well as their prey base, but this project remains in deferment status. The 2012 Whitewater-Baldy Complex Fire adversely affected the aquatic communities in the West and Middle Fork of the Gila River, as well as Iron Creek, as a result of excessive ash and sediment flows; this is similar to what occurred in Little Creek as a result of the 2011 Miller Fire. The physical or biological features in this unit may require special management consideration due to competition

with, and predation by, harmful nonnative species that are present in this unit; water diversions; channelization; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

### *Middle Gila River Subbasin Unit*

The Middle Gila River Mainstem Subbasin Unit is generally located within the Mogollon Rim in eastern Arizona (Greenlee and Graham Counties), from the upstream end of San Carlos Reservoir to the confluence of the San Francisco and Gila rivers in Arizona. This unit consists of a total 8,814 acres (3,567 ha) along 63 stream mi (101 km) of proposed critical habitat along the Gila River and Eagle Creek. Land ownership or land management within this unit consists of federally managed lands, tribal lands, and privately owned lands. Federal lands include those managed by the U.S. Bureau of Land Management and the U.S. Forest Service. Tribal lands include those owned by the San Carlos Apache Tribe. All identified areas described in the Middle Gila River Subbasin Unit have records for narrow-headed gartersnakes, and all identified areas are considered as currently within the geographical area occupied by the species.

Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Middle Gila River Subbasin Unit.

Gila River Subunit. We are proposing to designate 432 acres (175 ha) of critical habitat

along 2.8 stream mi (4.5 km) of the Gila River mainstem in Arizona, from the upstream end of the San Carlos Reservoir, upstream to its confluence with the San Francisco River, in Greenlee and Graham Counties. The reach of the Gila River mainstem within this subunit is managed by the U.S. Bureau of Land Management. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species.

Eagle Creek Subunit. We are proposing to designate 8,382 acres (3,392 ha) of critical habitat along 60.1 stream mi (96.7 km) of Eagle Creek, Arizona, from its confluence with the Gila River, upstream to its confluence with East Eagle Creek and Dry Prong Creek in Graham County. Eagle Creek occurs primarily on privately owned lands, with remaining lands managed by the Apache-Sitgreaves National Forest and the U.S. Bureau of Land Management, with additional lands owned by the San Carlos Apache Tribe. Groundwater pumping and water diversions from Eagle Creek for use at the Morenci Mine may affect baseflow in Eagle Creek. However, this subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish, as well as to maintain adequate base flows in Eagle Creek. Lands owned by the San Carlos Apache Tribe are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act

(see *Application of Section 4(b)(2) of the Act* below).

The Middle Gila River Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. Agricultural diversions and groundwater pumping have caused declines in the water table, and surface flows in this reach of the Gila River. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; groundwater pumping; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

#### *San Francisco River Subbasin Unit*

The San Francisco River Subbasin Unit is generally located in eastern Arizona in the vicinity of Clifton (Greenlee County), including southwestern New Mexico in the vicinities of Glenwood and Reserve, New Mexico (Catron County). This unit consists of a total of 45,075 acres (18,241 ha) along 322 stream mi (517 km) of proposed critical habitat along the San Francisco mainstem, Blue River, Campbell Blue Creek, Dry Blue Creek, South Fork Negrito Creek, Saliz Creek, Tularosa River, and Whitewater Creek. Land ownership or land management within this unit consists of lands managed by the U.S. Forest Service, U.S. Bureau of Land Management, New Mexico Department of Fish and Game, State Trust lands, and private ownership. Some identified areas described in the San Francisco River Subbasin Unit have

records for narrow-headed gartersnakes, but all identified areas are considered as being currently within the geographical area occupied by the species. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the San Francisco River Unit.

San Francisco River Subunit. We are proposing to designate 23,178 acres (9,380 ha) of critical habitat along 163.3 stream mi (262.7 km) of the San Francisco River, from its confluence with the Gila River in Greenlee County, Arizona, upstream to its origin northwest of Long Canyon in the Noble Mountains in Catron County, New Mexico. The San Francisco River Subunit is primarily managed by the Apache-Sitgreaves and Gila National Forests, with additional parcels managed by the U.S. Bureau of Land Management, the Arizona State Land Department, and under private ownership. Water diversions have dewatered sections of the San Francisco River in the upper Alma Valley and at Pleasanton, New Mexico. The San Francisco River has historically maintained populations of bullfrogs, crayfish, and nonnative, spiny-rayed fish at various densities along its course. The 2012 Whitewater-Baldy Complex Fire burned at both moderate and high severity within the San Francisco River Subbasin and has likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods may have simultaneously reduced populations of harmful nonnative species and native prey species for narrow-headed gartersnakes downstream of the confluences with affected tributaries. This subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3

(prey base) and 4 (absence or low level of harmful nonnative species) may be deficient in some reaches. Special management may be required to maintain or develop the physical or biological features, including preventing the reinvasion of harmful nonnative species and reestablishing native prey lost as a result of flooding and ash and sediment flows from the 2012 Whitewater-Baldy Complex Fire.

Blue River Subunit. We are proposing to designate 7,432 acres (3,007 ha) of critical habitat along 53.4 stream mi (86.0 km) of the Blue River, from its confluence with the San Francisco River, upstream to its confluence with Campbell Blue Creek and Dry Blue Creek near the Arizona-New Mexico State line in Catron County, New Mexico. The Blue River Subunit is primarily managed by the Apache-Sitgreaves National Forest with additional parcels under private ownership. The Blue River has historically maintained populations of crayfish and nonnative, spiny-rayed fish at various densities along its course. The 2011 Wallow Fire burned within this subbasin, which resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods may have simultaneously reduced populations of harmful nonnative species and native prey species for narrow-headed gartersnakes downstream of the confluences with affected tributaries. This subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) may be deficient in some reaches. Special management may be required to maintain or develop the physical or biological features, including preventing the reinvasion of harmful nonnative species and reestablishing of native prey lost as a result of flooding and ash and sediment flows from the 2011 Wallow Fire.

Campbell Blue Creek Subunit. We are proposing to designate 3,008 acres (1,217 ha) of critical habitat along 22.1 stream mi (35.6 km) of Campbell Blue Creek, from its confluence with the Blue River and Dry Blue Creek, upstream to its origin on Tenney Mountain in Greenlee County, Arizona. The Campbell Blue Creek Subunit is primarily managed by the Apache-Sitgreaves National Forest with additional parcels under private ownership. The Campbell Blue Creek subbasin resides within the footprint of the 2011 Wallow Fire, but the exact effects of the fire on this subunit are not entirely known at this time. This subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs and crayfish.

Dry Blue Creek Subunit. We are proposing to designate 1,320 acres (534 ha) of critical habitat along 9.4 stream mi (15.2 km) of Dry Blue Creek, from its confluence with Campbell Blue Creek and Blue River, upstream to its origin north of Hy Clark Spring in Greenlee County, Arizona. The Dry Blue Creek Subunit is managed by the Apache-Sitgreaves National Forest. The area proposed along Dry Blue Creek is within the area occupied by the narrow-headed gartersnake. The Dry Blue Creek subbasin resides within the footprint of the 2011 Wallow Fire, but the exact effects of the fire on this subunit are not entirely known at this time. This subunit contains sufficient physical or biological features, including all PCEs. Special management may be required to maintain or develop the physical or biological features, including management against the invasion of bullfrogs and nonnative, spiny-rayed fish.

South Fork Negrito Creek Subunit. We are proposing to designate 1,483 acres (600 ha) of critical habitat along 10.6 stream mi (17.0 km) of South Fork Negrito Creek, from its confluence with Negrito Creek and North Fork Negrito Creek, upstream to its confluence with unnamed drainage south of FR 4313B, in Catron County, New Mexico. The South Fork Negrito Creek Subunit is managed by the Gila National Forest with additional parcels under private ownership. South Fork Negrito Creek may have been affected by the 2012 Whitewater-Baldy Complex Fire, but the exact effects of the fire on this subunit are not entirely known at this time. This subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs.

Saliz Creek Subunit. We are proposing to designate 1,099 acres (445 ha) of critical habitat along 8.2 stream mi (13.1 km) of Saliz Creek, from its confluence with the San Francisco River, upstream to its origin at an unnamed spring north of Highway Tank in Catron County, New Mexico. The Saliz Creek Subunit is managed by the Gila National Forest with additional parcels under private ownership. The narrow-headed gartersnake prey base in Saliz Creek was significantly affected by the 2006 Martinez Fire, but has since rebounded, and the creek now supports four species of native fish. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient.



Special management may be required to maintain or develop the physical or biological features, including management against the invasion of bullfrogs, crayfish, and nonnative, spiny-rayed fish.

**Tularosa River Subunit.** We are proposing to designate 4,728 acres (1,913 ha) of critical habitat along 34.8 stream mi (55.9 km) of the Tularosa River, from its confluence with the San Francisco River, upstream to Tularosa Spring in Catron County, New Mexico. Land ownership along the Tularosa River is primarily private, with additional parcels managed by the Gila National Forest and the U.S. Bureau of Land Management. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of bullfrogs and crayfish.

**Whitewater Creek Subunit.** We are proposing to designate 2,829 acres (1,145 ha) of critical habitat along 19.8 stream mi (31.9 km) of Whitewater Creek, from its confluence with the San Francisco River, upstream to its origin south of Whitewater Baldy Peak in Catron County, New Mexico. Land along Whitewater Creek is primarily managed by the Gila National Forest with additional parcels managed by the New Mexico Department of Fish and Game or under private land ownership. The 2012 Whitewater-Baldy Complex Fire burned at both moderate and high severity within the Whitewater Creek Subbasin, which likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods have likely reduced native prey populations for narrow-headed gartersnakes for the short to

medium term. This subunit generally contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 4 (absence or low level of harmful nonnative species), but PCE 3 (prey base) may be deficient. Special management may be required to maintain or develop the physical or biological features, including preventing the invasion of harmful nonnative species and reestablishing native prey lost as a result of flooding and ash and sediment flows from the 2012 Whitewater-Baldy Complex Fire.

The San Francisco River Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

#### *Upper Salt River Subbasin Unit*

The Upper Salt River Subbasin Unit is generally located along the Mogollon Rim in east-central Arizona, and includes portions of Gila, Graham, Apache, Navajo, Greenlee, and Coconino Counties. The Upper Salt River Subbasin Unit largely includes remote, rural areas, generally under the ownership and management of tribal governments, specifically the White Mountain Apache and San Carlos Apache Tribes. This unit consists of a total of 58,014 acres

(23,478 ha) along 406 stream mi (654 km) of proposed critical habitat along the Salt River, White River, Canyon Creek, Carrizo Creek, Cibecue Creek, Diamond Creek, and Black River. Land ownership or land management within this unit consists of tribal lands and federally managed lands. Federal lands include those managed by the U.S. Forest Service. All identified areas described in the Upper Salt River Subbasin Unit have records for narrow-headed gartersnakes, and all identified areas are considered as currently within the geographical area occupied by the species. Therefore, we are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain sufficient amounts of the essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Upper Salt River Subbasin Unit.

Salt River Subunit. We are proposing to designate 12,877 acres (5,211 ha) of critical habitat along 86.3 stream mi (138.8 km) of the Salt River, from its intersection with State Highway 288, upstream to its confluence with Black and White rivers, northwest of Forks Butte, in Gila County, Arizona. The reach of the Salt River within this subunit is primarily owned by the White Mountain Apache and San Carlos Apache Tribes with additional parcels managed by the Tonto National Forest. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish. Lands owned by the White Mountain Apache and San Carlos Apache Tribes are being considered for

exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

White River Subunit. We are proposing to designate 2,588 acres (1,047 ha) of critical habitat along 18.1 stream mi (29.1 km) of the White River from its confluence with the Salt and Black rivers, upstream to its confluence with its own East and North Forks. The White River Subunit occurs in Gila and Navajo Counties, Arizona. The White River drainage is solely owned by the White Mountain Apache Tribe. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of nonnative, spiny-rayed fish and possibly crayfish or bullfrogs. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Canyon Creek Subunit. We are proposing to designate 7,346 acres (2,973 ha) of critical habitat along 52.8 stream mi (85.0 km) of Canyon Creek, from its confluence with the Salt River northwest of Canyon Creek Butte, upstream to its origin southwest of Forest Lakes, south of Rim Road, in Coconino, Gila, and Navajo Counties, Arizona. Canyon Creek is primarily owned by the White Mountain Apache Tribe with additional parcels under management by the Apache-Sitgreaves and Tonto National Forests. The area proposed along Canyon Creek is within the area occupied by the narrow-headed gartersnake. This subunit contains sufficient physical or biological features, including all PCEs. Special management may be required to maintain or

develop the physical or biological features, including preventing the invasion of harmful nonnative species. Lands owned by the White Mountain Apache Tribe are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Carrizo Creek Subunit. We are proposing to designate 9,033 acres (3,656 ha) of critical habitat along 64.3 stream mi (103.5 km) of Carrizo Creek, from its confluence with the Salt River, upstream to its origin north of Carrizo Ridge, north of the White Mountain Apache Indian Reservation, in Gila and Navajo Counties, Arizona. Carrizo Creek is primarily owned by the White Mountain Apache Tribe with additional parcels under Apache-Sitgreaves National Forest management. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) may be deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species. Lands owned by the White Mountain Apache Tribe are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Cibecue Creek Subunit. We are proposing to designate 6,669 acres (2,699 ha) of critical habitat along 48.1 stream mi (77.3 km) of Cibecue Creek, from its confluence with the Salt River west of Coyote Canyon, upstream to its origin north of Gatewood Canyon on the White Mountain Apache Indian Reservation, in Gila and Navajo Counties, Arizona. Cibecue Creek is solely owned by the White Mountain Apache Tribe. This subunit contains sufficient physical or

biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) may be deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Diamond Creek Subunit. We are proposing to designate 3,117 acres (1,261 ha) of critical habitat along 22.2 stream mi (35.7 km) of Diamond Creek, from its confluence with the White River, upstream to its origin northwest of Diamond Butte in White Mountains, in Apache and Navajo Counties, Arizona. Diamond Creek is solely owned by the White Mountain Apache Tribe. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) may be deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species. This subunit is being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

Black River Subunit. We are proposing to designate 16,384 acres (6,630 ha) of critical habitat along 114.4 stream mi (184.0 km) of the Black River from its confluence with the Salt and White rivers, upstream to its confluence with its own East and West Forks. The Black River Subunit occurs in Apache, Gila, Graham and Greenlee Counties, Arizona. Areas along the Black

River are primarily owned by the White Mountain Apache and San Carlos Apache Tribes, with additional parcels managed by the Apache-Sitgreaves National Forest. Water in the Black River is diverted for use at the Morenci Mine, which may affect baseflow. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics), but PCEs 3 (prey base) and 4 (absence or low level of harmful nonnative species) are deficient. The native fish prey base may be depressed in the short to medium term as a result of the 2011 Wallow Fire. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and, possibly, nonnative, spiny-rayed fish, as well as to maintain adequate base flows in the Black River. Lands owned by the White Mountain Apache and San Carlos Apache Tribes are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act* below).

The Upper Salt River Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and largely contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. However, the 2011 Wallow Fire adversely affected a large proportion of the Black River drainage, and subsequent ash and sediment flows have likely resulted in a depressed fish community, which could stress resident narrow-headed gartersnake populations in the short to medium term. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

### *Tonto Creek Subbasin Unit*

The Tonto Creek Subbasin Unit is generally located southeast of Payson, Arizona, and northeast of the Phoenix metropolitan area, in Gila County. This unit consists of a total of 12,795 acres (5,178 ha) along 91 stream mi (146 km) of proposed critical habitat along Haigler Creek, Houston Creek, and Tonto Creek. Land ownership or land management within this unit consists of lands managed by the Tonto National Forest and privately owned lands. All identified areas are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain essential physical or biological features that may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Tonto Creek Subbasin Unit.

Haigler Creek Subunit. We are proposing to designate 3,037 acres (1,229 ha) of critical habitat along 21.8 stream mi (35.2 km) of Haigler Creek, from its confluence with Tonto Creek upstream to its origin at east end of Naeglin Canyon, west of Cherry Creek, in Gila County, Arizona. Haigler Creek occurs predominately on lands managed by the Tonto National Forest. The remaining land ownership is private. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish.



Houston Creek Subunit. We are proposing to designate 2,046 acres (828 ha) of critical habitat along 14.7 stream mi (23.7 km) of Houston Creek, from its confluence with Tonto Creek upstream to its origin below Walnut Flat north of the town of Star Valley, in Gila County, Arizona. Houston Creek occurs predominately on lands managed by the Tonto National Forest. The remaining land ownership is private. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish.

Tonto Creek Subunit. We are proposing to designate 7,712 acres (3,121 ha) of critical habitat along 54.1 stream mi (87.0 km) of Tonto Creek, from its confluence with an unnamed tributary northeast of Punkin Center upstream to its origin northeast of Tonto Spring, south of Rim Road, in Gila County, Arizona. Tonto Creek occurs predominately on lands managed by the Tonto National Forest. The remaining landownership is private. Some reaches along Tonto Creek experience seasonal drying as a result of regional groundwater pumping, while others are affected by diversions or existing or planned flood control projects. Development along private reaches of Tonto Creek may also affect terrestrial characteristics of narrow-headed gartersnake habitat. Mercury has been detected in fish samples within Tonto Creek, and further research is necessary to determine if mercury is bioaccumulating in the resident food chain. In general, this subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or

low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, bullfrogs, and nonnative, spiny-rayed fish, as well as to improve base flows.

The Tonto Creek Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; flood-control projects; potential for high-intensity wildfires; and development of areas adjacent to or within proposed critical habitat.

#### *Verde River Subbasin Unit*

The Verde River Subbasin Unit is generally located southwest of Paulden, Arizona, and northwest of Payson, Arizona, in Coconino, Gila, and Yavapai Counties. This unit consists of a total of 35,586 acres (14,401 ha) along approximately 248 stream mi (399 km) of proposed critical habitat along the Verde River and its tributaries, including Oak Creek, West Fork Oak Creek, and the East Verde River. Lands within this unit consist of federally managed lands, State Trust lands and other State-managed lands, tribal lands, and privately owned lands. All identified areas are considered as being within the geographical area currently occupied by the species. We are proposing the areas in this unit under section 3(5)(A)(i) of the Act because they are occupied by the species and because they contain essential physical or biological features that

may require special management considerations or protection. The following narratives describe all of the subunits proposed as critical habitat in the Verde River Subbasin Unit.

*Verde River Subunit.* We are proposing to designate 18,721 acres (7,576 ha) of critical habitat along 127.5 stream mi (205.2 km) of the Verde River, from its confluence with Red Creek southwest of Wet Bottom Mesa, upstream to its confluence with Sullivan Lake, in Gila and Yavapai Counties, Arizona. The Verde River occurs predominantly on lands managed by the U.S. Forest Service on the Prescott, Tonto, and Coconino National Forests. Remaining land management and ownership includes the Arizona Game and Fish Department, Arizona State Parks, Arizona State Trust, Yavapai Apache Tribe, and private land owners. Proposed groundwater pumping of the Big Chino Aquifer may adversely affect future baseflow in the Verde River, and therefore PCE 1. Development along the Verde River has eliminated habitat along portions of the Verde River through the Verde Valley. In general, this subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish, nonnative, spiny-rayed fish, and bullfrogs, as well as ensure adequate flow is retained in the Verde River. Lands along the Verde River mainstem included in the Arizona Game and Fish Departments' Upper Verde Wildlife Area, lands owned by the Yavapai Apache Tribe, the Nature Conservancy's Verde Springs Preserve, as well as those owned by the Salt River Project and addressed within their Horseshoe-Bartlett and Roosevelt Lake Habitat Conservation Plans (HCP) are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of

the Act (see *Application of Section 4(b)(2) of the Act* below).

*Oak Creek Subunit.* We are proposing to designate 7,369 acres (2,982 ha) of critical habitat along 51.3 stream mi (82.5 km) of Oak Creek, from its confluence with the Verde River upstream to its confluence with Sterling Canyon, in Yavapai and Coconino Counties, Arizona. Above Sterling Canyon, flows are insufficient to maintain aquatic habitat and prey species. Oak Creek occurs predominately on lands managed by Coconino National Forest and privately owned lands. Remaining lands are managed by Arizona Game and Fish Department and Arizona State Parks. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient downstream of Midgely Bridge to the confluence with the Verde River. Special management may be required to maintain or develop the physical or biological features, including encouragement of native prey base and the elimination or reduction of crayfish, nonnative, spiny-rayed fish, and bullfrogs downstream of Midgely Bridge. .

*West Fork Oak Creek Subunit.* We are proposing to designate 2,137 acres (865 ha) of critical habitat along 16.1 stream mi (25.9 km) of West Fork Oak Creek, from its confluence with the Oak Creek upstream to its origin southeast of Hog Hill, in Coconino County, Arizona. The West Fork of Oak Creek is managed by the Coconino National Forest. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to

maintain or develop the physical or biological features, including the elimination or reduction of harmful nonnative species.

*East Verde River Subunit.* We are proposing to designate 7,360 acres (2,978 ha) of critical habitat along 53.3 stream mi (85.8 km) of East Verde River, from the confluence with the Verde River upstream to its origin south of Rim Road along the Mogollon Rim, in Gila County, Arizona. East Verde River occurs predominantly on lands managed by the Tonto National Forest, with remaining lands privately owned. This subunit contains sufficient physical or biological features, including PCEs 1 (aquatic habitat characteristics), 2 (terrestrial habitat characteristics), and 3 (prey base), but PCE 4 (absence or low level of harmful nonnative species) is deficient. Special management may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish. .

The Verde River Subbasin Unit is proposed as critical habitat for the narrow-headed gartersnake because it is occupied at the time of listing and contains sufficient physical or biological features to support life-history functions essential for the conservation of the species. Increasing demands for surface water allocations present a potential threat to baseflow in the East Verde River. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, harmful nonnative species that are present in this unit; water diversions; existing and proposed groundwater pumping potentially resulting in drying of habitat; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

## Effects of Critical Habitat Designation

### *Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5<sup>th</sup> and 9<sup>th</sup> Circuit Courts of Appeals have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9<sup>th</sup> Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5<sup>th</sup> Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible

Federal agency (action agency) must enter into consultation with us. In addition to actions that occur on Federal lands, other examples of actions that are subject to the section 7 consultation process are actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act), or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local, or private lands that are not federally-funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect, or are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected by the action, and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

#### *Application of the "Adverse Modification" Standard*



The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. In this case, those activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the northern Mexican and narrow-headed gartersnakes. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in section 7 consultation related to effects to the northern Mexican or narrow-headed gartersnakes. These activities include, but are not limited to:

(1) Actions that would alter the amount, timing, or frequency of flow within a stream or the quantity of available water within wetland habitat such that the prey base for either gartersnake species, or the gartersnakes themselves, are appreciably diminished or threatened with extirpation. Such activities could include, but are not limited to: Water diversions; channelization; construction of any barriers or impediments within the active river channel; removal of flows in excess of those allotted under a given water right; construction of permanent or temporary diversion structures; groundwater pumping within aquifers associated with the

river; or dewatering of isolated within-channel pools or stock tanks. These activities could result in the reduction of the distribution or abundance of important gartersnake prey species, as well as reduce the distribution and amount of suitable physical habitat on a regional landscape for the gartersnakes themselves.

(2) Actions that would significantly increase sediment deposition or scouring within the stream channel or pond that is habitat for the northern Mexican or narrow-headed gartersnake, or one or more of their prey species within the range of either gartersnake species. Such activities could include, but are not limited to: Excessive sedimentation from livestock overgrazing; road construction; commercial or urban development; channel alteration; timber harvest; prescribed fires or wildfire suppression; off-road vehicle or recreational use; and other alterations of watersheds and floodplains. These activities could adversely affect the potential for gartersnake prey species to survive or breed. They may also reduce the likelihood that their prey species, leopard frogs for example, could move among subpopulations in a functioning metapopulation. This would, in turn, decrease the viability of metapopulations and their component local populations of prey species.

(3) Actions that would alter water chemistry beyond the tolerance limits of a gartersnake prey base. Such activities could include, but are not limited to: Release of chemicals, biological pollutants, or effluents into the surface water or into connected groundwater at a point source or by dispersed release (non-point source); aerial deposition of known toxicants, such as mercury, that are positively correlated to regional exceedences of water quality standards for these toxicants; livestock grazing that results in waters heavily polluted by feces; runoff from

agricultural fields; roadside use of salts; aerial pesticide overspray; runoff from mine tailings or other mining activities; and ash flow and fire retardants from fires and fire suppression. These actions could adversely affect the ability of the habitat to support survival and reproduction of gartersnake prey species. Variances in water chemistry or temperature could also affect a leopard frog's ability to survive with disease such as *Batrachochytrium dendrobatidis* (Bd).

(4) Actions that would remove, diminish, or significantly alter the structural complexity of key terrestrial habitat features within 600 feet (183 m) of aquatic habitat. Terrestrial features may be organic or inorganic, may be natural or manmade, and include, but are not limited to, boulders and boulder piles, rocks such as river cobble, downed trees or logs, debris jams, small mammal burrows, or leaf litter. Such activities could include, but are not limited to: Construction projects; flood control projects; vegetation management projects; or any project that requires a 404 permit from the U.S. Army Corps of Engineers. These activities could result in a reduction of the amount or distribution of these key habitat features that are important for gartersnake thermoregulation, gestation, shelter, protection from predators, and foraging opportunities.

(5) Actions and structures that would physically block movement of gartersnakes or their prey species within or between regionally proximal populations or suitable habitat. Such actions and structures include, but are not limited to: Urban, industrial, or agricultural development; reservoirs stocked with predatory fishes, bullfrogs, or crayfish that are 50 ac (20 ha) or more in size; highways that do not include reptile and amphibian fencing and culverts; and walls, dams, fences, canals, or other structures that could physically block movement of gartersnakes. These

actions and structures could reduce or eliminate immigration and emigration among gartersnake populations, or that of their prey species, reducing the long-term viability of populations.

(6) Actions that would directly or indirectly result in the introduction, spread, or augmentation of harmful nonnative species in gartersnake habitat, or in habitat that is hydrologically connected, even if those segments are occasionally intermittent, or introduction of other species that compete with or prey on either gartersnake species or their prey base, or introduce disease, particularly chytridiomycosis (the disease caused by Bd) which is a serious threat to the amphibian prey base of northern Mexican gartersnakes. Possible actions could include, but are not limited to: Introduction or stocking of nonnative, spiny-rayed fishes, bullfrogs, crayfish, tiger salamanders, or other predators on the prey base of northern Mexican or narrow-headed gartersnakes; creating or sustaining a sport fishery that encourages use of nonnative live fish, crayfish, tiger salamanders, or frogs as bait; maintaining or operating reservoirs that act as source populations for harmful nonnative species within a watershed; water diversions, canals, or other water conveyance that moves water from one place to another and through which inadvertent transport of harmful nonnative species into northern Mexican or narrow-headed gartersnake habitat may occur; and movement of water, mud, wet equipment, or vehicles from one aquatic site to another, through which inadvertent transport of Bd may occur. These activities directly or indirectly result in unnatural competition with and predation from harmful nonnative predators on these gartersnake species, leading to significantly reduced recruitment within gartersnake populations and diminishment or extirpation of their prey base.

(7) Actions that would deliberately remove, diminish, or significantly alter the native or nonnative, soft-rayed fish component of the gartersnake prey base within occupied habitat for a period of 7 days or longer. In general, these actions typically occur in association with fisheries management, such as the application of piscicides in conjunction with fish barrier construction. These activities are designed to completely remove target fish species from a treatment area and, if the area is fishless for an extended period of time, could result in starvation of a resident gartersnake population.

## **Exemptions**

### *Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no Department of Defense lands with a completed INRMP within the proposed critical habitat designations for the northern Mexican and narrow-headed gartersnakes.

## **Exclusions**

### *Application of Section 4(b)(2) of the Act*

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to

critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impacts of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive from the protection from adverse modification or destruction as a result of actions with a Federal nexus; the educational benefits of mapping essential habitat for recovery of the listed species; and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation; the continuation, strengthening, or encouragement of partnerships; or implementation of a management plan that provides equal to or more conservation than a critical habitat designation would provide.

In the case of northern Mexican and narrow-headed gartersnakes, the benefits of critical habitat include public awareness of these gartersnakes' presence and the importance of habitat protection, and, in cases where a Federal nexus exists, increased habitat protection due to the protection from adverse modification or destruction of critical habitat.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of critical habitat. Federal agencies must consult with us on discretionary actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Federal agencies must also consult with the Service on discretionary actions that may affect a listed species and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species, and in some locations, the outcome of these analyses will be similar, because effects on habitat will often result in effects on the species. However, the regulatory standard is different. The jeopardy analysis looks at the action's impact on survival and recovery of the species, while the adverse modification analysis examines the action's effects on the designated habitat's contribution to the species' conservation. This will, in many instances, lead to different results and different



regulatory requirements. Thus, critical habitat designations may provide greater regulatory benefits to the recovery of a species.

There are two limitations to the regulatory effect of critical habitat. First, a section 7(a)(2) consultation is required only where there is a Federal nexus (an action authorized, funded, or carried out by any Federal agency). If there is no Federal nexus, the critical habitat designation of non-Federal lands itself does not restrict any actions that destroy or adversely modify critical habitat. However, this does not apply in situations where non-Federal lands have a Federal nexus (e.g., a private project on non-Federal lands that requires the issuance of a permit from a Federal agency). Second, the designation only limits destruction or adverse modification. Critical habitat designation alone does not require property owners to undertake affirmative actions to promote the recovery of the species.

The designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species or adverse modification of its critical habitat or both, but not necessarily to manage critical habitat or institute recovery actions on critical habitat. Conversely, voluntary conservation efforts implemented through management plans may institute proactive actions over the lands they encompass and are often put in place to remove or reduce known threats to a species or its habitat, therefore implementing recovery actions.

Another benefit of including lands in critical habitat is that serves to educate landowners,

State and local governments, and the public regarding the potential conservation value of an area. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high conservation value for the affected species. For example, critical habitat designation can help inform State agencies and local governments about areas that could be conserved under State laws or local ordinances.

Most federally listed species in the United States will not recover without the cooperation of non-Federal landowners. Geo-referenced data indicate that than 60 percent of the United States is privately owned, and at least 80 percent of endangered or threatened species occur either partially or solely on private lands. U.S. Department of Interior data indicate that only about 12 percent of listed species were found almost exclusively on Federal lands (90 to 100 percent of their known occurrences restricted to Federal lands) and that 50 percent of federally listed species are not known to occur on Federal lands at all.

The majority of northern Mexican and narrow-headed gartersnake habitat and localities are on Federal lands, mostly lands managed by the U.S. Forest Service or Bureau of Land Management. However, key aquatic sites are sometimes on non-Federal lands. This is particularly true for Arizona, where proposed critical habitat units include, in some cases, significant amounts of entirely non-Federal lands.

Building partnerships and promoting voluntary cooperation of landowners are essential to understanding the status of species on non-Federal lands, and necessary for implementing recovery actions, such as reestablishing listed species and restoring and protecting habitat. Many

non-Federal landowners derive satisfaction from contributing to endangered species recovery. We strive to promote these private-sector efforts through the Department of the Interior's Cooperative Conservation philosophy. Conservation agreements with non-Federal landowners (HCPs, safe harbor agreements, other conservation agreements, easements, and State and local regulations) enhance species conservation by extending species protections beyond those available through section 7(a)(2) consultations. In the past decade and a half, we have encouraged non-Federal landowners to enter into conservation agreements, based on our philosophy that voluntary conservation can benefit both landowners and wildlife, and that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (61 FR 63854; December 2, 1996). The Chiricahua leopard frog provides an example; we have often used the Service's Partners for Fish and Wildlife grant program to work with non-Federal partners on recovery projects for this species. This grant program requires a commitment from the participating landowner to maintain the improvements funded by the program for 10 years. We have also worked with private landowners on Chiricahua leopard frog conservation via safe harbor agreements in Arizona and southwestern New Mexico, a conservation agreement for the Chiricahua leopard frog that protects frogs and their habitats on private and public lands in the Huachuca Mountains of Arizona, and HCPs in southeastern Arizona and southwestern New Mexico. Collectively, these projects, programs, and agreements benefit the northern Mexican gartersnake by meaningfully contributing to the recovery of an important prey species, which also indirectly benefits a suite of native riparian or aquatic species by strengthening their ecosystem.

Many private landowners, however, are wary of the possible consequences of attracting

or maintaining endangered species to their property. Mounting evidence suggests that some regulatory actions by the Federal government, while well-intentioned and required by law, can (under certain circumstances) have unintended negative consequences for the conservation of species on private lands (Wilcove *et al.* 1996, pp. 5–6; Bean 2002, pp. 2–3; Conner and Mathews 2002, pp. 1-2; James 2002, pp. 270–271; Koch 2002, pp. 2–3; Brooke *et al.* 2003, pp. 1639–1643). Many landowners fear a decline in their property value due to real or perceived restrictions on land-use options where endangered or threatened species are found. Consequently, harboring endangered species is viewed by many landowners as a liability. This perception results in anti-conservation incentives, because maintaining habitats that harbor endangered species represents a risk to future economic opportunities (Main *et al.* 1999, pp. 1264–1265; Brook *et al.* 2003, pp. 1644–1648).

According to some researchers, the designation of critical habitat on private lands significantly reduces the likelihood that landowners will support and carry out conservation actions (Main *et al.* 1999, p. 1263; Bean 2002, p. 2; Brook *et al.* 2003, pp. 1644–1648). The magnitude of this outcome is greatly amplified in situations where active management measures (such as reestablishment, fire management, control of harmful nonnative species) are necessary for species conservation (Bean 2002, pp. 3–4). Such is the case for the northern Mexican and narrow-headed gartersnakes. We believe that the judicious exclusion of specific areas of non-federally owned lands from critical habitat designations can contribute to the species' recovery and provide a superior level of conservation.

The purpose of designating critical habitat is to contribute to the conservation of

endangered and threatened species and the ecosystems upon which they depend. The outcome of the designation, triggering regulatory requirements for actions authorized, funded, or carried out by Federal agencies under section 7(a)(2) of the Act, can sometimes be counterproductive to its intended purpose on non-Federal lands. Thus, the benefits of excluding areas that are covered by effective partnerships or other conservation commitments can often be high.

Some areas proposed for critical habitat can be excluded based on an existing management plan. When we evaluate a management plan during our consideration of the benefits of exclusion, we assess a variety of factors, including, but not limited to, whether the plan is finalized, how it provides for the conservation of the essential physical or biological features, whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future, whether the conservation strategies in the plan are likely to be effective, and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Based on the information provided by entities seeking exclusion, as well as any

additional public comments received, we will evaluate whether certain lands within the proposed critical habitat areas of the Upper Gila River, Agua Fria River, Upper Salt River, Verde River, Upper Santa Cruz River, Redrock Canyon, Cienega Creek, San Pedro River, and Babocomari River subbasins for the northern Mexican gartersnake; and the Upper Gila River, Middle Gila River, Upper Salt River, and Verde River subbasins for the narrow-headed gartersnake are appropriate for exclusion from the final designation pursuant to section 4(b)(2) of the Act. If the analysis indicates that the benefits of excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat, then the Secretary may exercise his discretion to exclude the lands from the final designation.

After reviewing the following areas under section 4(b)(2) of the Act, we are considering excluding them from the critical habitat designation for northern Mexican and narrow-headed gartersnakes. Tables 4a and 4b below provide approximate areas (ac, ha) of lands that meet the definition of critical habitat, but which are under our consideration for possible exclusion under section 4(b)(2) of the Act from the final critical habitat rule.

TABLE 4a. Areas considered for exclusion (by critical habitat unit) for the northern Mexican gartersnake.

Unit/Subunit	Specific Area	Areas Meeting the Definition of Critical	Areas Considered for Possible Exclusion,
--------------	---------------	--	--

		<b>Habitat, in Acres (Hectares)</b>	<b>in Acres (Hectares)</b>
Upper Gila River Unit/Gila River	The Nature Conservancy's Gila Riparian Preserve	133 (54)	133 (54)
Agua Fria River Subbasin Unit/Agua Fria River Mainstem	Arizona Game and Fish Department's Horseshoe Ranch Property	88 (36)	88 (36)
Upper Salt River Subbasin Unit/Black River	White Mountain Apache and San Carlos Apache Indian Reservations	13,760 (5,569)	13,760 (5,569)
Upper Salt River Subbasin Unit/Big Bonito Creek	White Mountain Apache Reservation	5,826 (2,358)	5,826 (2,358)
Verde River Subbasin Unit/Verde River	Yavapai Apache Reservation	192 (78)	192 (78)
Verde River Subbasin Unit/Verde River	Arizona Game and Fish Department's Upper Verde Wildlife Area	372 (150)	372 (150)
Verde River Subbasin	The Nature Conservancy's Verde Springs Preserve and Verde Valley	209 (84)	209 (84)

Unit/Verde River	Property		
Verde River Subbasin Unit/Verde River	Salt River Project's Camp Verde Riparian Preserve	76 (31)	76 (31)
Verde River Subbasin Unit/Oak Creek	Arizona Game and Fish Department's Bubbling Ponds and Page Springs State Fish Hatcheries	149 (60)	149 (60)
Upper Santa Cruz River Subbasin Unit	San Rafael Ranch	18,491 (7,483)	18,491 (7,483)
Redrock Canyon Subbasin Unit	The Nature Conservancy's Patagonia-Sonoita Creek Preserve	65 (26)	65 (26)
Cienega Creek Subbasin Unit/Cienega Creek Natural Preserve	Pima County's Cienega Creek Natural Preserve	4,260 (1,724)	4,260 (1,724)
San Pedro River Subbasin Unit/San Pedro River	The Nature Conservancy's San Pedro River Preserve, A7 Ranch, Cascabel, Dudleyville, and Upper San Pedro Properties	1,688 (683)	1,688 (683)
San Pedro River Subbasin	San Carlos Apache Indian Reservation	76 (31)	76 (31)



Unit/San Pedro River			
San Pedro River Subbasin Unit/San Pedro River	Salt River Project's Spirit Hollow Preserve and Annex, Stillinger Preserve, and Adobe Preserve	190 (77)	190 (77)
Babocomari River Subbasin Unit/Appleton-Whittell Research Ranch	Appleton-Whittell Research Ranch (includes portions of Post Canyon, O'Donnel Canyon, and Turkey Creek)	7,754 (3,138)	2,515 (1,018)
Babocomari River Subbasin Unit/Canelo Hills Cienega Preserve	The Nature Conservancy's Canelo Hills Cienega Preserve	213 (86)	213 (86)

TABLE 4b. Areas considered for exclusion (by critical habitat unit) for the narrow-headed gartersnake.

Unit/Subunit	Specific Area	Areas Meeting the Definition of Critical	Areas Considered for Possible Exclusion,
--------------	---------------	--	--

		<b>Habitat, in Acres (Hectares)</b>	<b>in Acres (Hectares)</b>
Upper Gila River Subbasin Unit/Gila River	The Nature Conservancy's Gila Riparian Preserve	133 (54)	133 (54)
Middle Gila River Subbasin Unit/Eagle Creek	San Carlos Apache Reservation	2,558 (1,035)	2,558 (1,035)
Upper Salt River Subbasin Unit/Salt River	White Mountain Apache and San Carlos Apache Indian Reservations	7,502 (3,036)	7,502 (3,036)
Upper Salt River Subbasin Unit/Black River	White Mountain Apache and San Carlos Apache Indian Reservations	13,752 (5,565)	13,752 (5,565)
Upper Salt River Subbasin Unit/White River	White Mountain Apache Reservation	2,588 (1,047)	2,588 (1,047)
Upper Salt River Subbasin Unit/Canyon Creek	White Mountain Apache Reservation	6,160 (2,493)	6,160 (2,493)
Upper Salt River	White Mountain Apache	8,875	8,875

Subbasin Unit/Carrizo Creek	Reservation	(3,592)	(3,592)
Upper Salt River Subbasin Unit/Cibique Creek	White Mountain Apache Reservation	6,669 (2,699)	6,669 (2,699)
Upper Salt River Subbasin Unit/Diamond Creek	White Mountain Apache Reservation	3,117 (1,261)	3,117 (1,261)
Verde River Subbasin Unit/Verde River	Yavapai Apache Reservation	192 (78)	192 (78)
Verde River Subbasin Unit/Verde River	Arizona Game and Fish Department's Upper Verde River Wildlife Area	372 (150)	372 (150)
Verde River Subbasin Unit/Verde River	Salt River Project's Camp Verde Riparian Preserve	76 (31)	76 (31)
Verde River Subbasin Unit/Verde River	The Nature Conservancy's Verde Springs Preserve and Verde Valley Property	209 (84)	209 (84)

We are considering these areas for exclusion because we believe that:

(1) Their value for conservation will be preserved in the future by existing protective actions, or

(2) They are appropriate for exclusion under the “other relevant factor” provision of section 4(b)(2) of the Act.

However, we specifically solicit comments on the inclusion or exclusion of such areas.

#### Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the economic impacts of the proposed critical habitat designation and related factors. Potential land use sectors that may be affected by this proposed rulemaking include development, livestock grazing, mining, timber, recreation, flood control, fisheries management, and agriculture.

We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://www.regulations.gov>, or by contacting the Arizona Ecological Services Field Office

directly (see **FOR FURTHER INFORMATION CONTACT**). During the development of a final designation, we will consider economic impacts, public comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

#### Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist.

In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for the northern Mexican and narrow-headed gartersnakes are not owned or managed by the Department of Defense, and, therefore, we anticipate no impact on national security. Consequently, the Secretary does not propose to exert his discretion to exclude any areas from the final designation based on impacts on national security.

#### Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues, and consider the

government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

Land and Resource Management Plans, Conservation Plans, Agreements Based on Conservation Partnerships, or General Land Management that Favors a Native Biological Community

We consider a current land management or conservation plan (HCPs, as well as other types) to provide adequate management or protection if it meets the following criteria:

- (1) The plan is complete and provides the same or better level of protection from adverse modification or destruction than that provided through a consultation under section 7 of the Act;
- (2) There is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations; and
- (3) The plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology.

We consider management plans that are designed for native fish as having nearly equal value to the northern Mexican or narrow-headed gartersnake because actions taken to protect or improve the status of native fish are commensurate with conservation of these gartersnakes. Native fish are sensitive to water availability, habitat modification, and harmful nonnative species in a similar manner as these gartersnakes; for the northern Mexican gartersnake, this also includes its ranid prey species. The commonality shared between the ecological needs and

threats faced by all native riparian and aquatic species broadly supports the notion that what is good for one taxon is largely beneficial to another. This is particularly true for these two gartersnake species, where managing for native prey species not only provides conservation of important physical habitat elements, but also maintains an adequate prey base for the snakes themselves.

During the preparation of the 2007 critical habitat designation for spikedace and loach minnow (72 FR 13355; March 21, 2007), we received management plans from the White Mountain Apache Tribe, San Carlos Apache Tribe, and Freeport McMoRan (formerly Phelps Dodge). Additionally, a Tribal Resolution was prepared by the Yavapai Apache Nation. These management plans were ultimately used to exclude areas under section 4(b)(2) of the Act from critical habitat designation for the spikedace and loach minnow (77 FR 10810; February 23, 2012). We also consider the San Rafael Ranch's safe harbor agreement for Gila topminnow in its potential benefits to the northern Mexican gartersnake in the San Rafael Valley. We will consider these materials and any other relevant information pertaining to these entities during the development of the final rule to determine if any of these areas should be excluded from the final critical habitat designation under section 4(b)(2) of the Act.

In addition, the Arizona Game and Fish Department has initiated candidate conservation planning for the northern Mexican gartersnake on its Horseshoe Ranch property and Bubbling Ponds and Page Springs State Fish Hatcheries. We have received and reviewed a draft management plan for the northern Mexican gartersnake for these properties. We also recognize our strong conservation partners in the Pima County's Cienega Creek Natural Preserve, the

Appleton-Whittell Research Ranch, and various properties managed by The Nature Conservancy, all of whom manage exclusively for native species, which, by default, we recognize as managing specifically against harmful nonnative species, the primary threat to the northern Mexican and narrow-headed gartersnakes. In addition, we recognize the Arizona Game and Fish Department's management of Upper Verde River Wildlife Area, as also favoring native fish species, thereby benefitting both the northern Mexican and narrow-headed gartersnakes by improving their regional prey base.

Finally, a large portion of the Verde River and several of its perennial tributaries are included in the area covered by the Salt River Project's (SRP) Horseshoe-Bartlett HCP for operation of Horseshoe and Bartlett Dams. While implementation of the Horseshoe-Bartlett HCP will provide some indirect benefit for northern Mexican and narrow-headed gartersnakes from implementation of conservation measures for their prey species, the HCP does not involve all land owners within the covered area, and therefore does not allow for exclusion of the entire covered area under section 4(b)(2) of the Act. However, SRP has acquired property which they manage along the Verde and San Pedro Rivers as mitigation for their Horseshoe-Bartlett and Roosevelt HCPs. These properties are managed for the promotion of riparian vegetation and provide direct benefits to resident gartersnake populations and their prey species. We will consider these properties and any other relevant information during the development of the final rule to determine if this area should be excluded from the final critical habitat designation under section 4(b)(2) of the Act.

## **Peer Review**



In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We invite these peer reviewers to comment during this public comment period on our specific assumptions and conclusions in this proposed designation of critical habitat.

We will consider all comments and information we receive during this comment period on this proposed rule during our preparation of a final determination. Accordingly, the final decision may differ from this proposal.

### **Public Hearings**

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

### **Required Determinations**

*Regulatory Planning and Review—Executive Orders 12866 and 13563*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of Executive Order 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. Executive Order 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C. 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes

the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include such businesses as manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and forestry and logging operations with fewer than 500 employees and annual business less than \$7 million. To determine whether small entities may be affected, we will consider the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Importantly, the incremental impacts of a rule must be *both* significant and substantial to prevent certification of the rule under the RFA and to require the preparation of an initial

regulatory flexibility analysis. If a substantial number of small entities are affected by the proposed critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify.

The Service's current understanding of recent case law is that Federal agencies are only required to evaluate the potential impacts of rulemaking on those entities directly regulated by the rulemaking; therefore, they are not required to evaluate the potential impacts to those entities not directly regulated. The designation of critical habitat for an endangered or threatened species only has a regulatory effect where a Federal action agency is involved in a particular action that may affect the designated critical habitat.

Under these circumstances, only the Federal action agency is directly regulated by the designation, and, therefore, consistent with the service's current interpretation of RFA and recent case law, the Service may limit its evaluation of the potential impacts to those identified for federal action agencies. Under this interpretation, there is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated, such as small businesses.

However, Executive Orders 12866 and 13563 direct Federal agencies to assess costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consequently, it is the current practice of the Service to assess to the extent practicable these potential impacts if sufficient data are available, whether or not this analysis is believed by the Service to be strictly required by the RFA. In other words, while the effects analysis required under the RFA is limited to entities directly regulated by the rulemaking, the effects analysis under the Act, consistent with the E.O. regulatory analysis requirements, can take into

consideration impacts to both directly and indirectly impacted entities, where practicable and reasonable.

In conclusion, we believe that, based on our interpretation of directly regulated entities under the RFA and relevant case law, this designation of critical habitat will only directly regulate Federal agencies, which are not by definition small business entities. And as such, we certify that, if promulgated, this designation of critical habitat would not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required. However, though not necessarily required by the RFA, in our draft economic analysis for this proposal, we will consider and evaluate the potential effects to third parties that may be involved with consultations with Federal action agencies related to this action.

#### *Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. We do not expect the designation of this proposed critical habitat to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty

arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We lack the available economic information to determine if a Small Government Agency Plan is required. Therefore, we defer this finding until completion of the draft economic analysis is prepared under section 4(b)(2) of the Act.

#### *Takings—Executive Order 12630*

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we will analyze the potential takings implications of designating critical habitat for the northern Mexican and narrow-headed

gartersnakes in a takings implications assessment. The draft economic analysis will provide the foundation for us to use in preparing a takings implication assessment. We will defer the preparation of the takings implication assessment until we have evaluated the comments on the draft economic analysis. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward.

#### *Federalism—Executive Order 13132*

In accordance with Executive Order 13132 (Federalism), this proposed rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in New Mexico and Arizona. The designation of critical habitat in areas currently occupied by the northern Mexican and narrow-headed gartersnakes imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather



than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of the species. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain any new collections of information that require approval by

OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to NEPA in connection with designating critical habitat under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). However, when the range of the species includes States within the Tenth Circuit, such as that of the northern Mexican and narrow-headed gartersnakes, under the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we will undertake a NEPA analysis for critical habitat designation and notify the public of the availability of the draft environmental assessment for this proposal when it is finished.

*Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-

Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

The tribal lands in Arizona included in this proposed designation of critical habitat are the lands of the White Mountain Apache Tribe, San Carlos Apache Tribe, and Yavapai Apache Nation. We used the criteria found in the *Criteria Used To Identify Critical Habitat* section to identify tribal lands that are occupied by the northern Mexican and narrow-headed gartersnakes that contain the features essential for the conservation of these species. We began government-to-government consultation with these tribes on November 29, 2011, in a pre-notification letter informing the tribes that we had begun an evaluation of the northern Mexican and narrow-headed gartersnakes for listing purposes under the Act. We will consider these areas for exclusion from the final critical habitat designation to the extent consistent with the requirements of section 4(b)(2) of the Act. We sent notification letters on March 12, 2013, to each tribe that described the exclusion process under section 4(b)(2) of the Act and invited them to meet to discuss the listing process and engage in conversation with us about the proposal to the extent possible without disclosing predecisional information. We will schedule meetings with these tribes and

any other interested tribes as early as legally possible so that we can give them as much time as possible to comment.

### *Clarity of the Rule*

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

### **References Cited**

A complete list of references cited in this rulemaking is available on the Internet at

*http://www.regulations.gov* and upon request from the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

## **Authors**

The primary authors of this package are the staff members of the Arizona Ecological Services Field Office.

## **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

## **Proposed Regulation Promulgation**

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### **PART 17—[AMENDED]**

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.

2. In § 17.95, amend paragraph (c) by adding entries for “Northern Mexican Gartersnake (*Thamnophis eques megalops*)” and “Narrow-headed Gartersnake (*Thamnophis rufipunctatus*),” in the same alphabetical order that the species appear in the table at § 17.11(h), to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

\* \* \* \* \*

**(c) *Reptiles.***

\* \* \* \* \*

Northern Mexican Gartersnake (*Thamnophis eques megalops*)

(1) Critical habitat units are depicted for Greenlee, Graham, Apache, La Paz, Mohave, Yavapai, Navajo, Gila, Coconino, Cochise, Santa Cruz, Pima, and Pinal Counties in Arizona, as well as in Grant, Hidalgo, and Catron Counties in New Mexico, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the northern Mexican gartersnake consist of:

(i) Aquatic or riparian habitat that includes:

(A) Perennial or spatially intermittent streams of low to moderate gradient that possess appropriate amounts of in-channel pools, off-channel pools, or backwater habitat, and that possess a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads; or

(B) Lentic wetlands such as livestock tanks, springs, and cienegas; and

(C) Shoreline habitat with adequate organic and inorganic structural complexity to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities (e.g., boulders, rocks, organic debris such as downed trees or logs, debris jams, small mammal burrows, or leaf litter); and

(D) Aquatic habitat with characteristics that support a native amphibian prey base, such as salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations.

(ii) Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation.

(iii) A prey base consisting of viable populations of native amphibian and native fish species.

(iv) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed nonnative fish

populations (prey) is still occurring.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

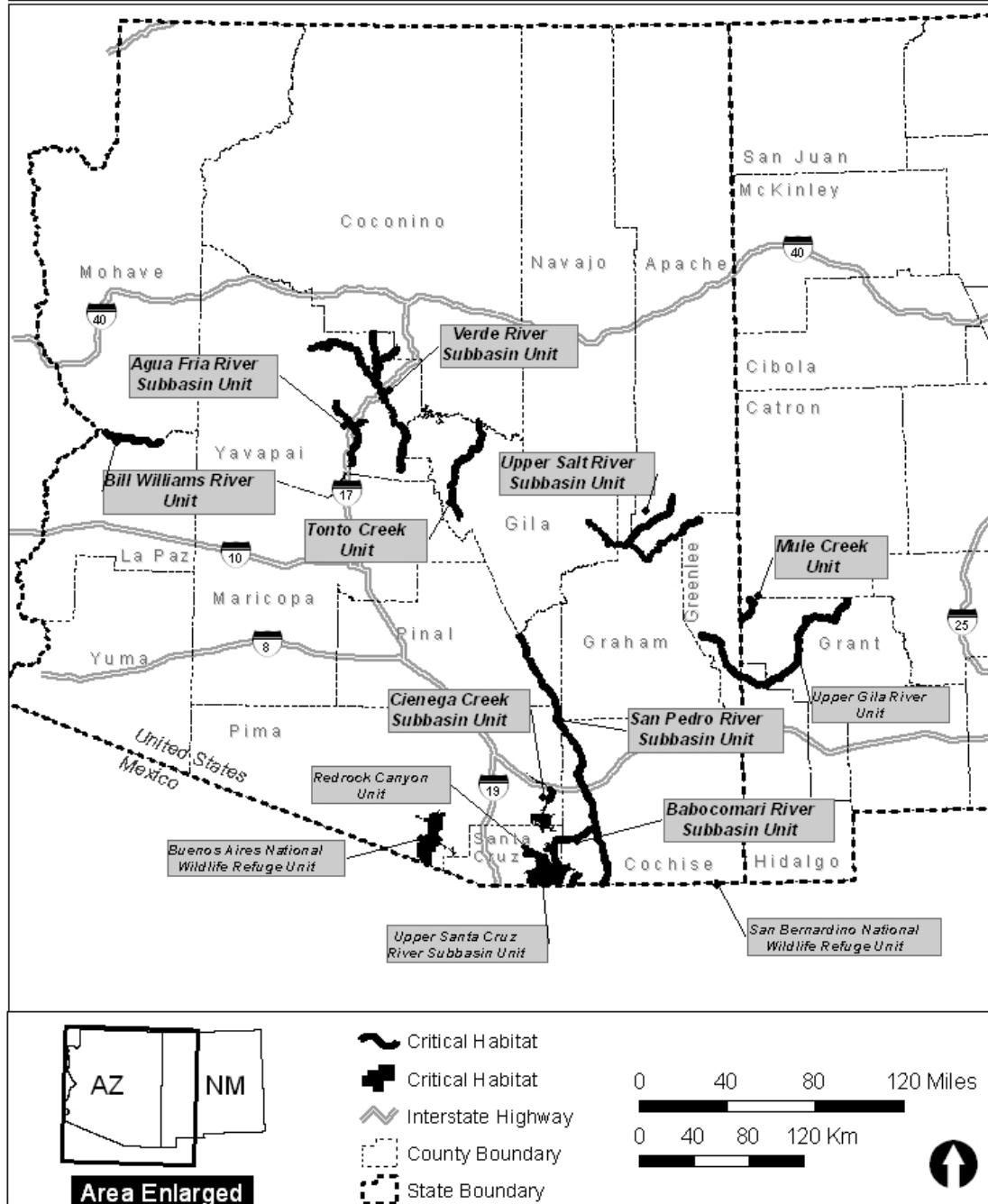
(4) *Critical habitat map units.* Data layers defining map units were created on a base of USGS 7.5' quadrangles, the Service's online Lands Mapper, the U.S. Geological Survey National Hydrography Dataset, and imagery from Google Earth. Line locations for lotic streams (flowing water) and drainages are depicted as the "Flowline" feature class from the National Hydrography Dataset geodatabase. Administrative boundaries for Arizona and New Mexico were obtained from the Arizona Land Resource Information Service and New Mexico Resource Geographic Information System, respectively. This includes the most current (as of the effective date of this rule) geospatial data available for land ownership, counties, States, and streets. Locations depicting critical habitat are expressed as decimal degree latitude and longitude in the World Geographic Coordinate System projection using the 1984 datum (WGS84). Information on northern Mexican gartersnake localities was derived from survey forms, reports, publications, field notes, and other sources, all of which reside in our files at the Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021.

(5) Index map follows:

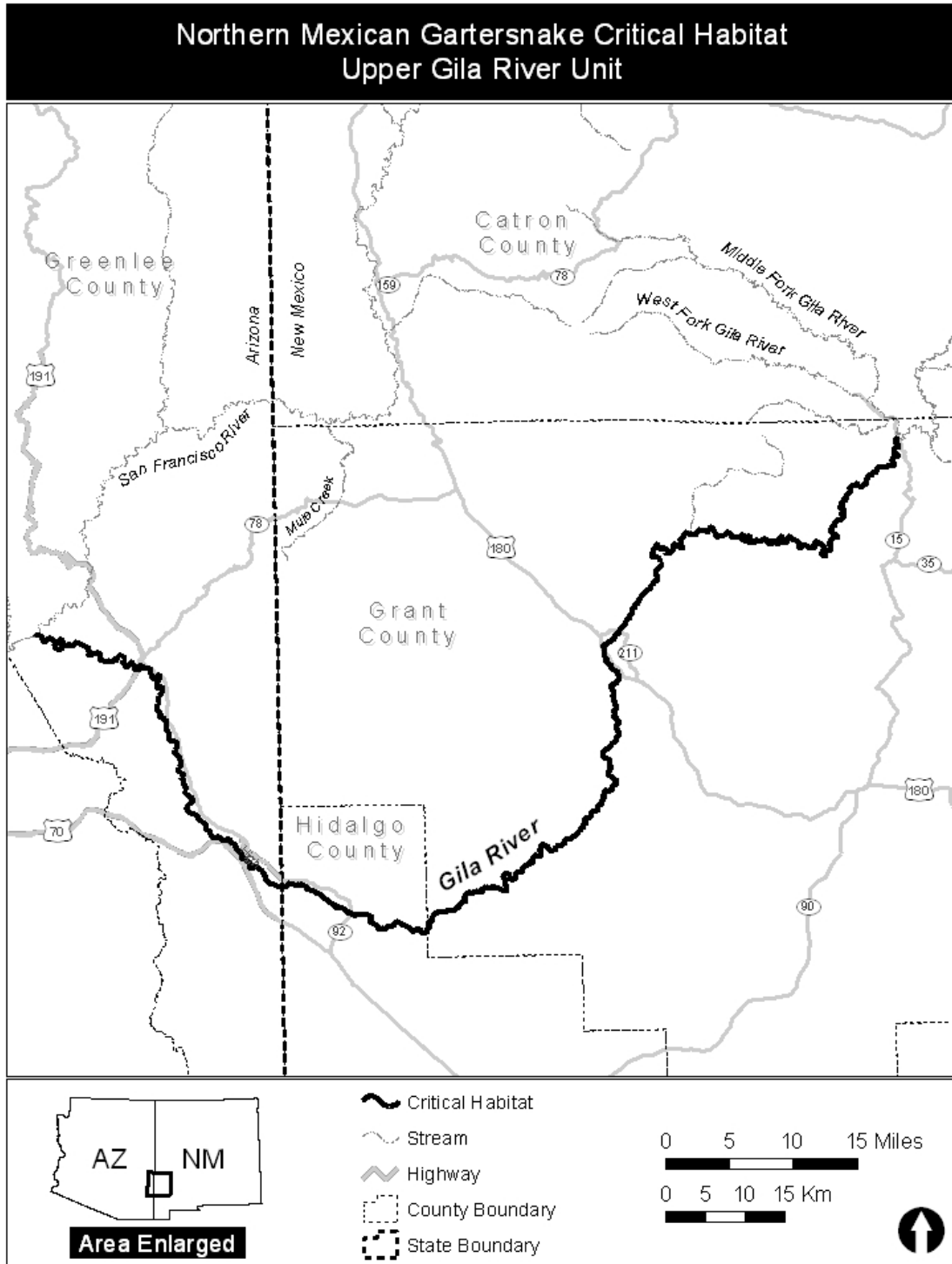




# Northern Mexican Gartersnake Critical Habitat Index Map

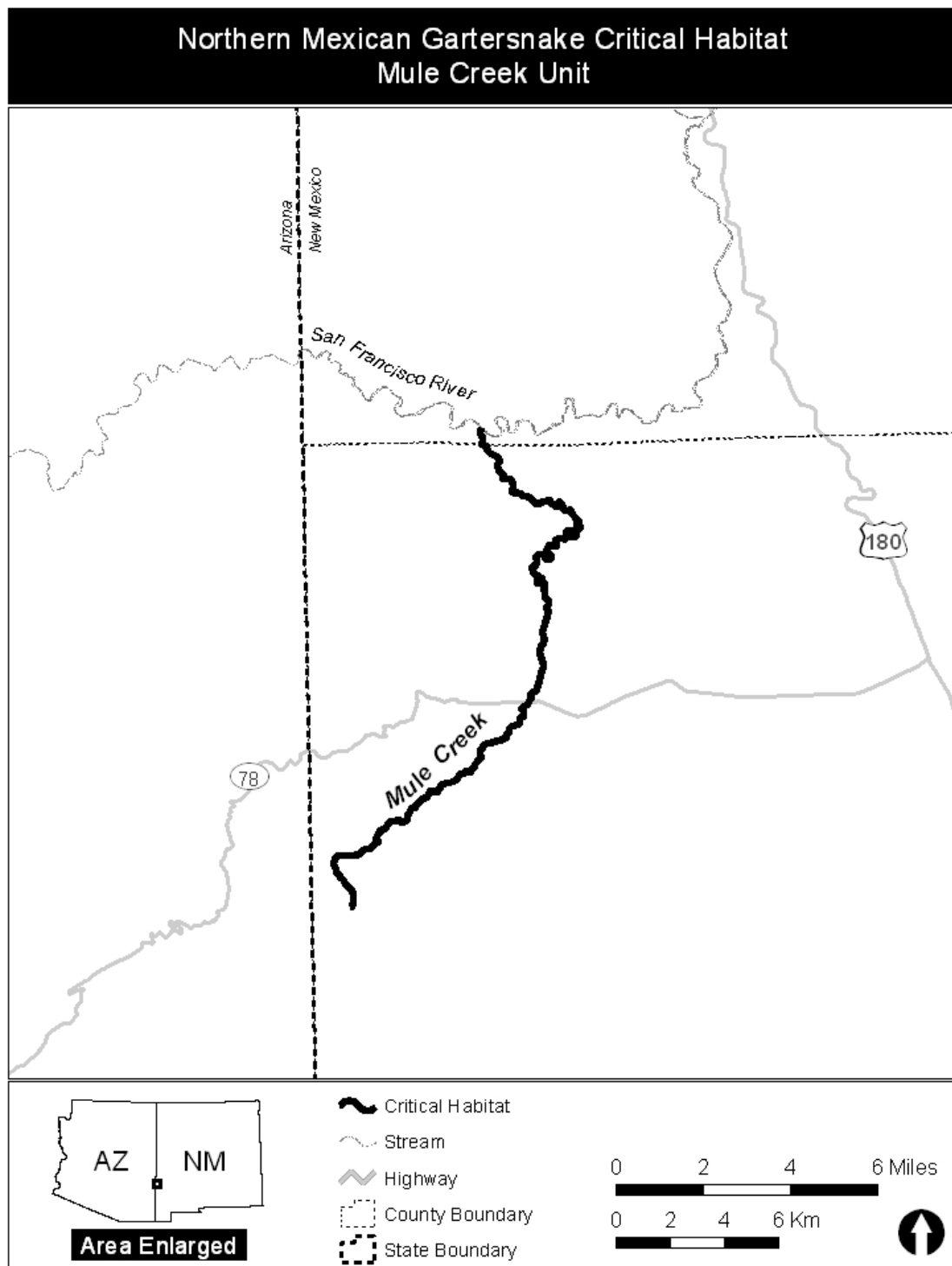


(6) Upper Gila River Unit: Hidalgo and Grant Counties, NM; Graham County, AZ. Map of the Upper Gila River Unit follows:



(7) Mule Creek Unit: Catron and Grant Counties, NM. Map of the Mule Creek Unit

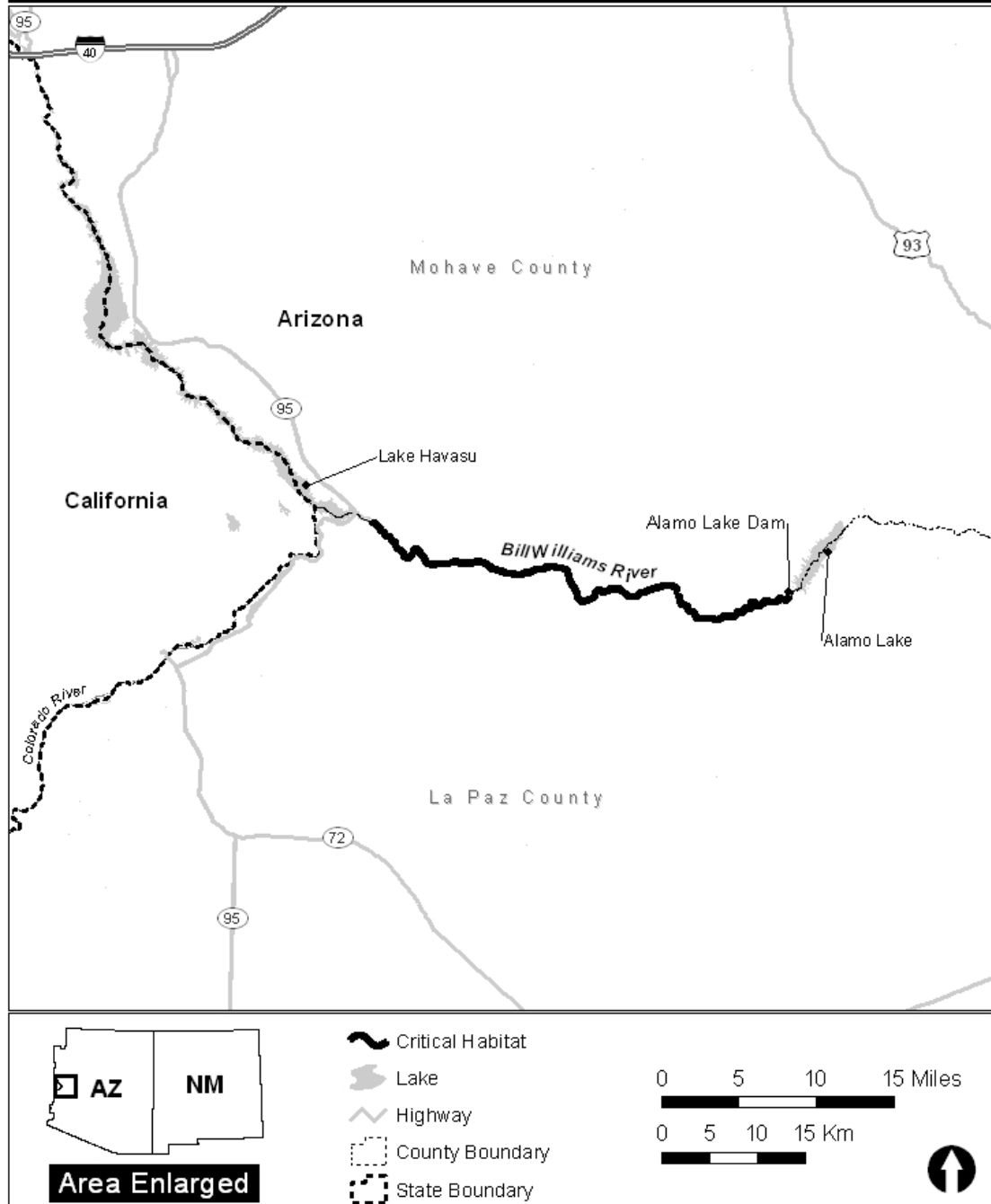
follows:



(8) Bill Williams River Unit: La Paz and Mohave Counties, AZ. Map of the Bill

Williams River Unit follows:

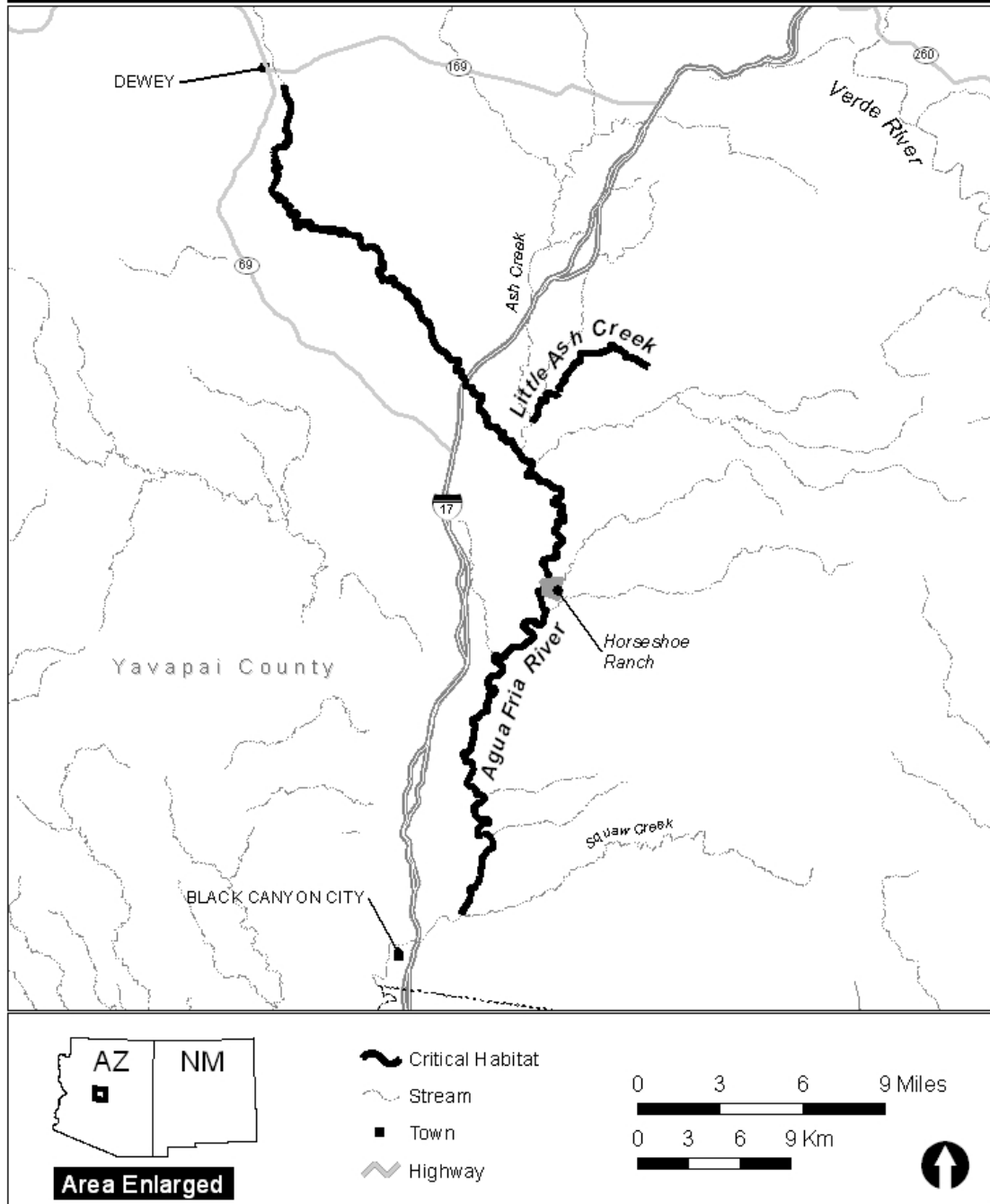
# Northern Mexican Gartersnake Critical Habitat Bill Williams River Unit



(9) Agua Fria River Subbasin Unit: Yavapai County, AZ. Map of the Agua Fria River Subbasin Unit follows:

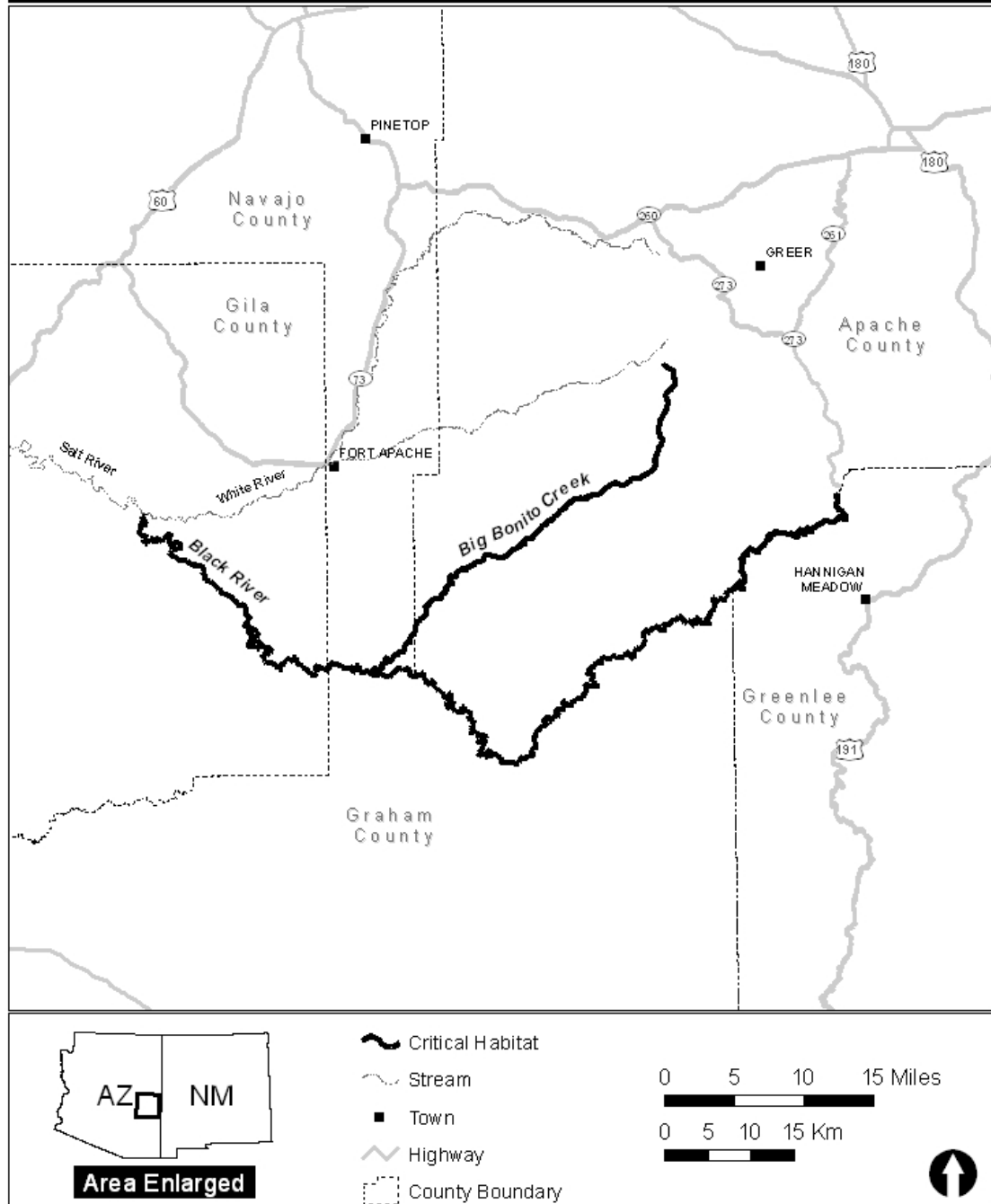


# Northern Mexican Gartersnake Critical Habitat Agua Fria River Subbasin Unit



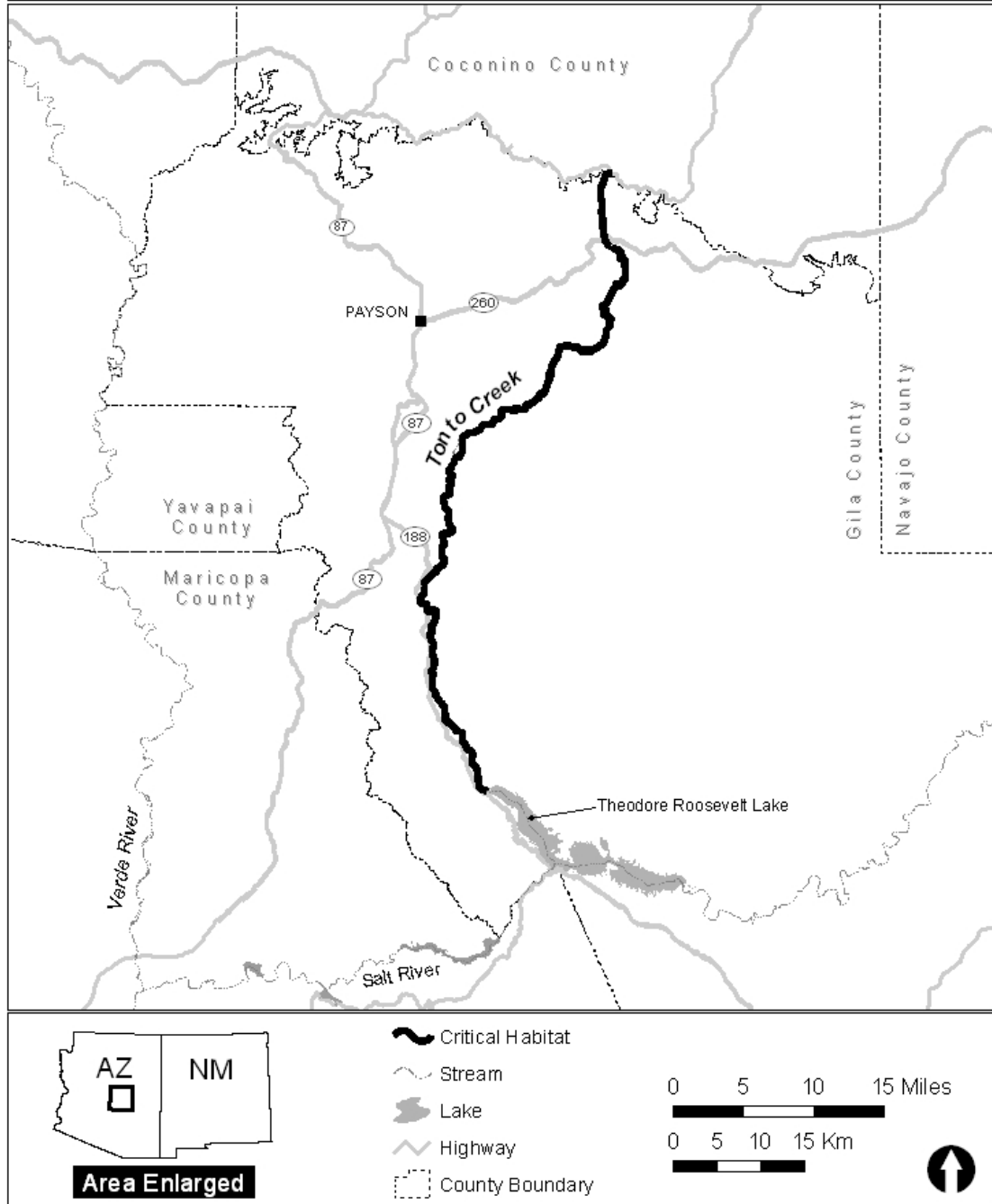
(10) Upper Salt River Subbasin Unit: Gila, Graham, Apache, Navajo, and Greenlee Counties, AZ. Map of the Upper Salt River Subbasin Unit follows:

# Northern Mexican Gartersnake Critical Habitat Upper Salt River Subbasin Unit



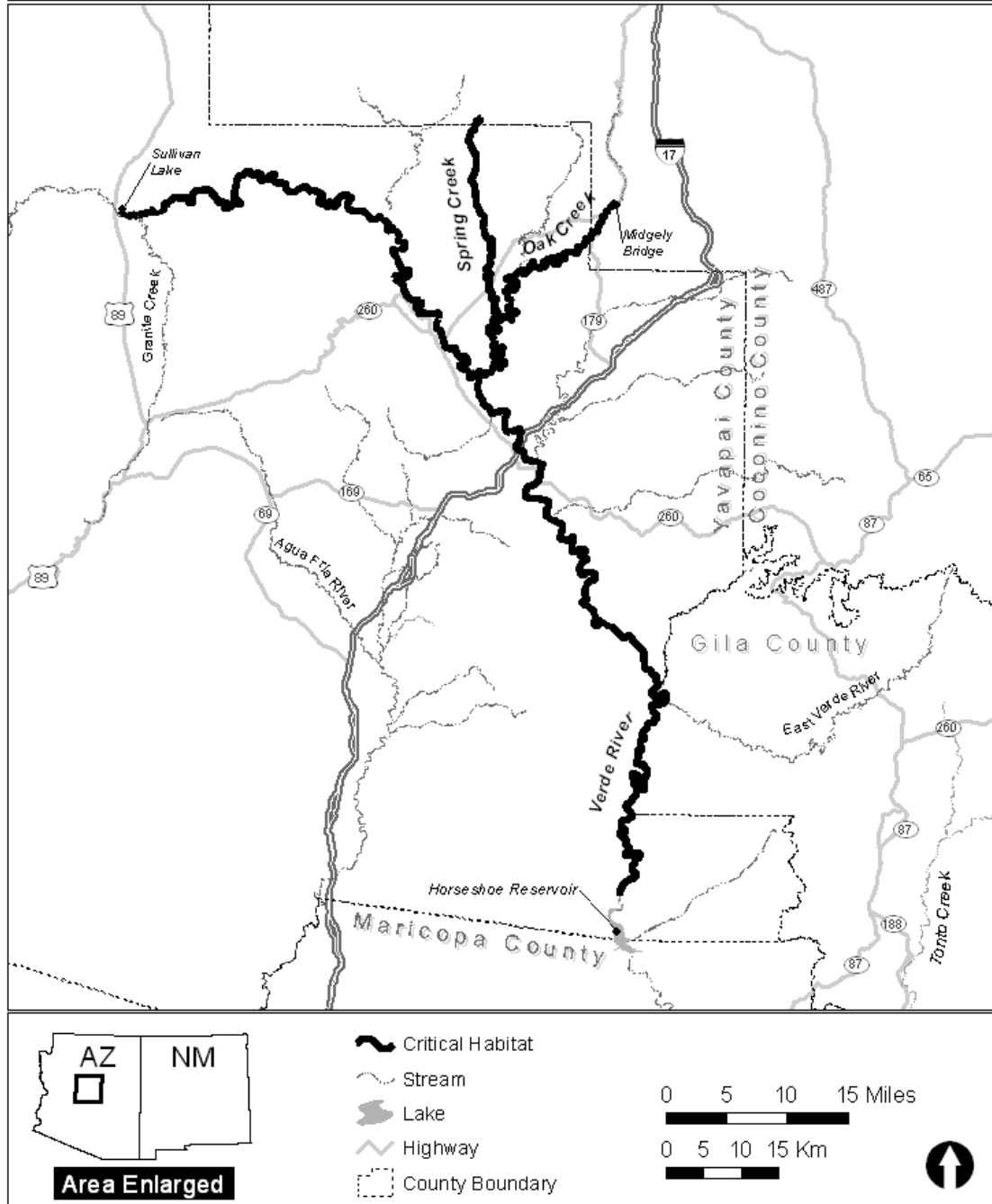
(11) Tonto Creek Unit: Gila County, AZ. Map of the Tonto Creek Unit follows:

# Northern Mexican Gartersnake Critical Habitat Tonto Creek Unit



(12) Verde River Subbasin Unit: Coconino, Gila, and Yavapai Counties, AZ. Map of the Verde River Subbasin Unit follows:

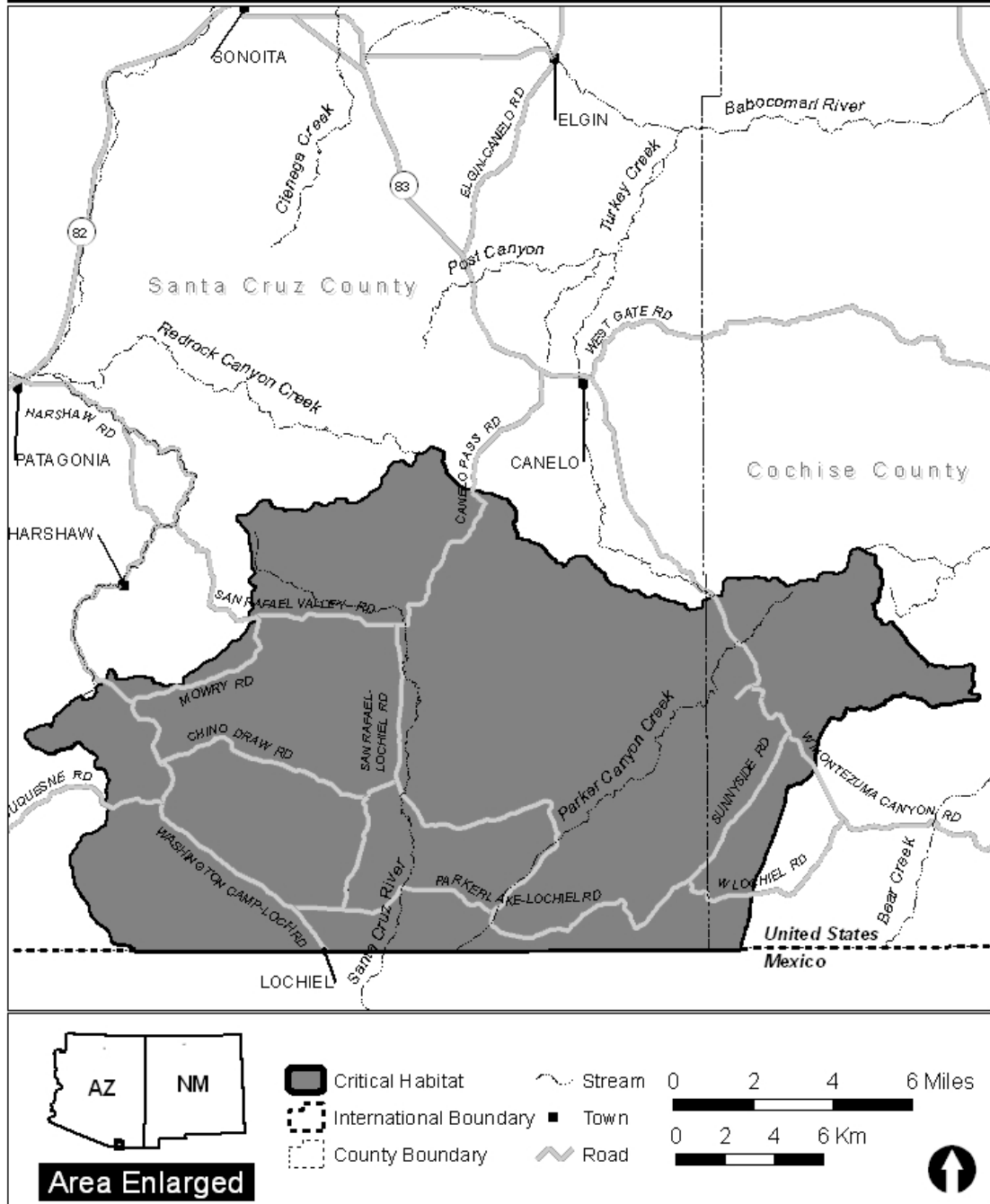
# Northern Mexican Gartersnake Critical Habitat Verde River Subbasin Unit



(13) Upper Santa Cruz River Subbasin Unit: Santa Cruz and Cochise Counties, AZ. Map of the Upper Santa Cruz River Subbasin Unit follows:

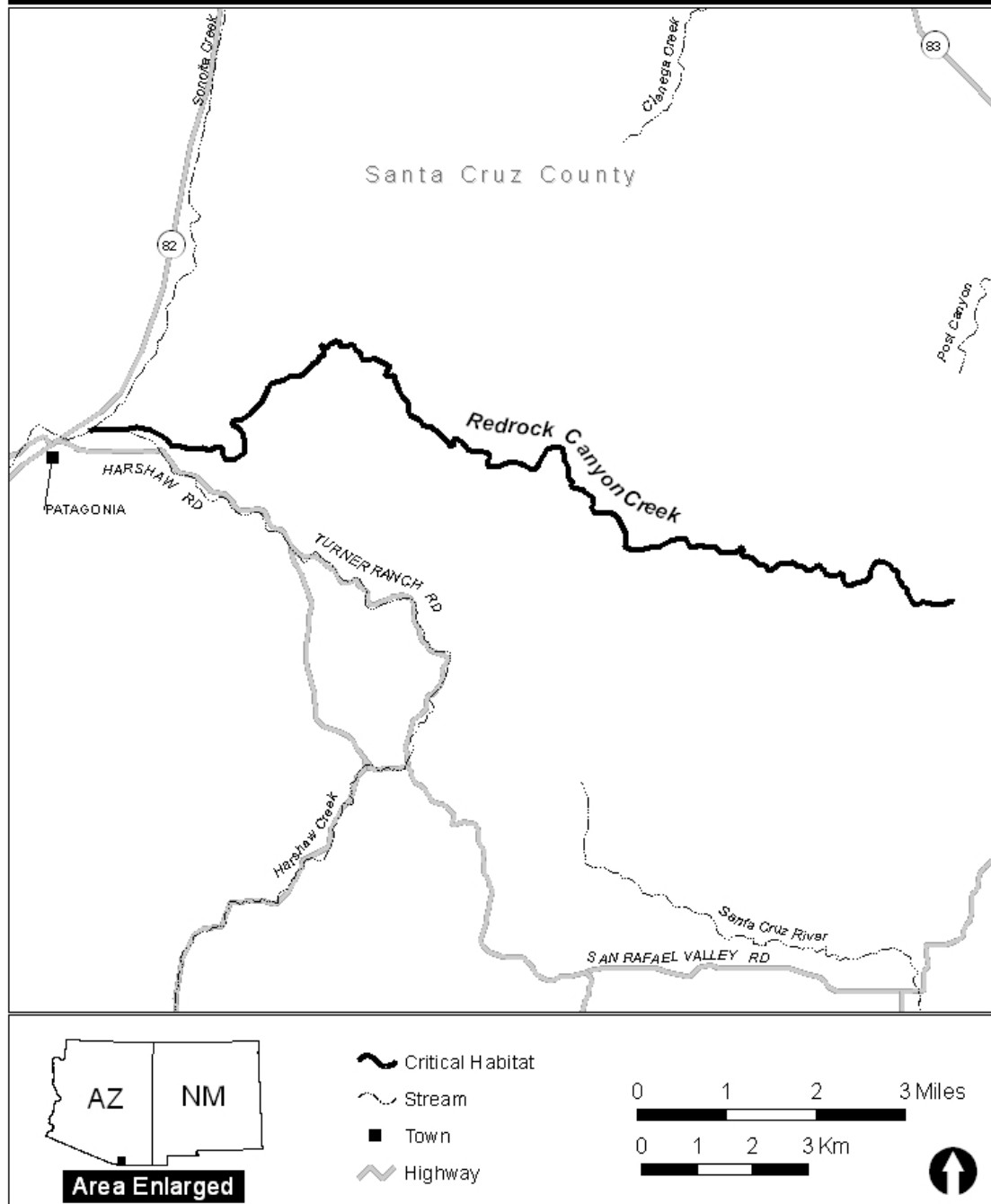


# Northern Mexican Gartersnake Critical Habitat Upper Santa Cruz River Subbasin Unit



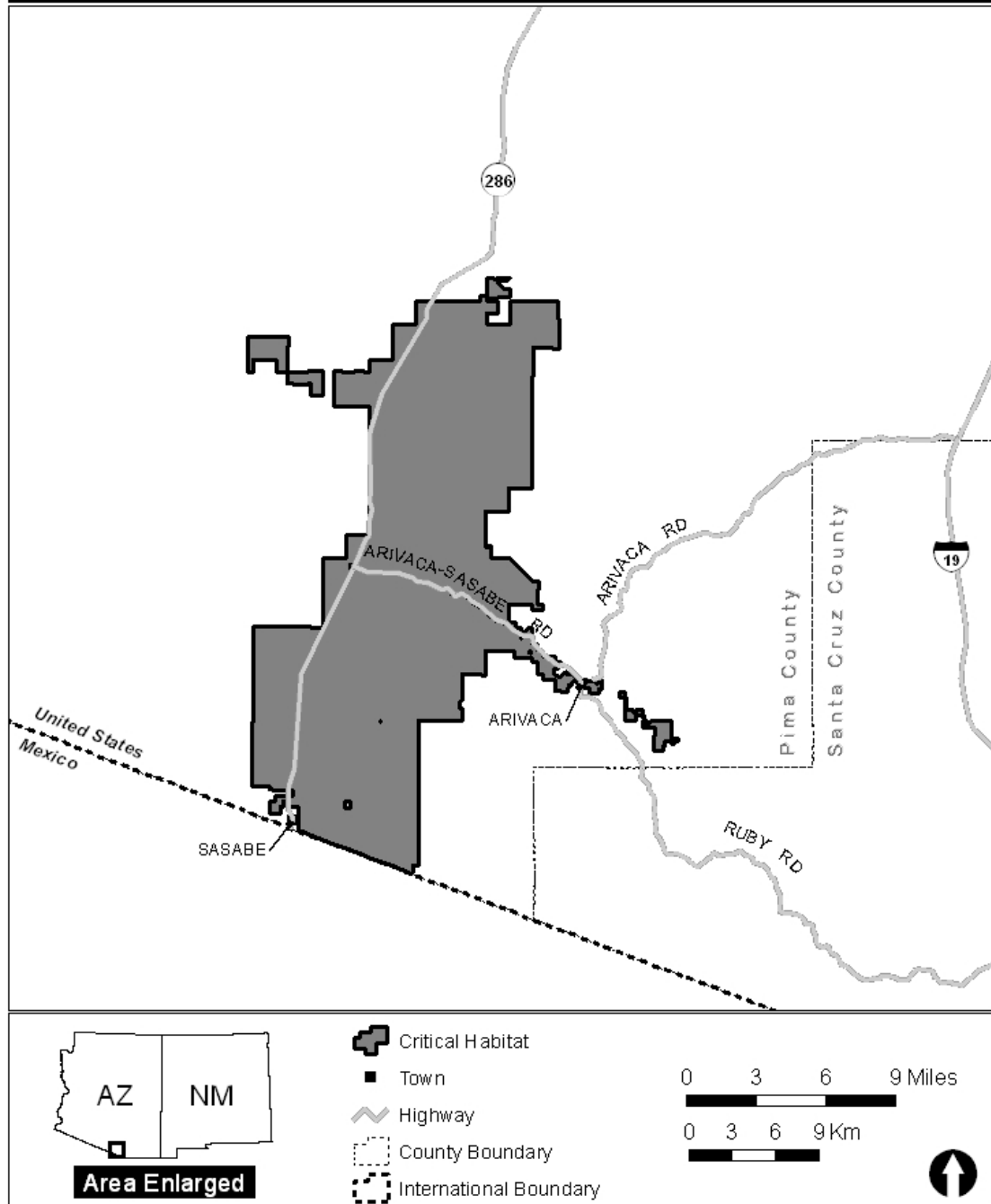
(14) Redrock Canyon Unit: Santa Cruz County, AZ. Map of the Redrock Canyon Unit follows:

# Northern Mexican Gartersnake Critical Habitat Redrock Canyon Unit



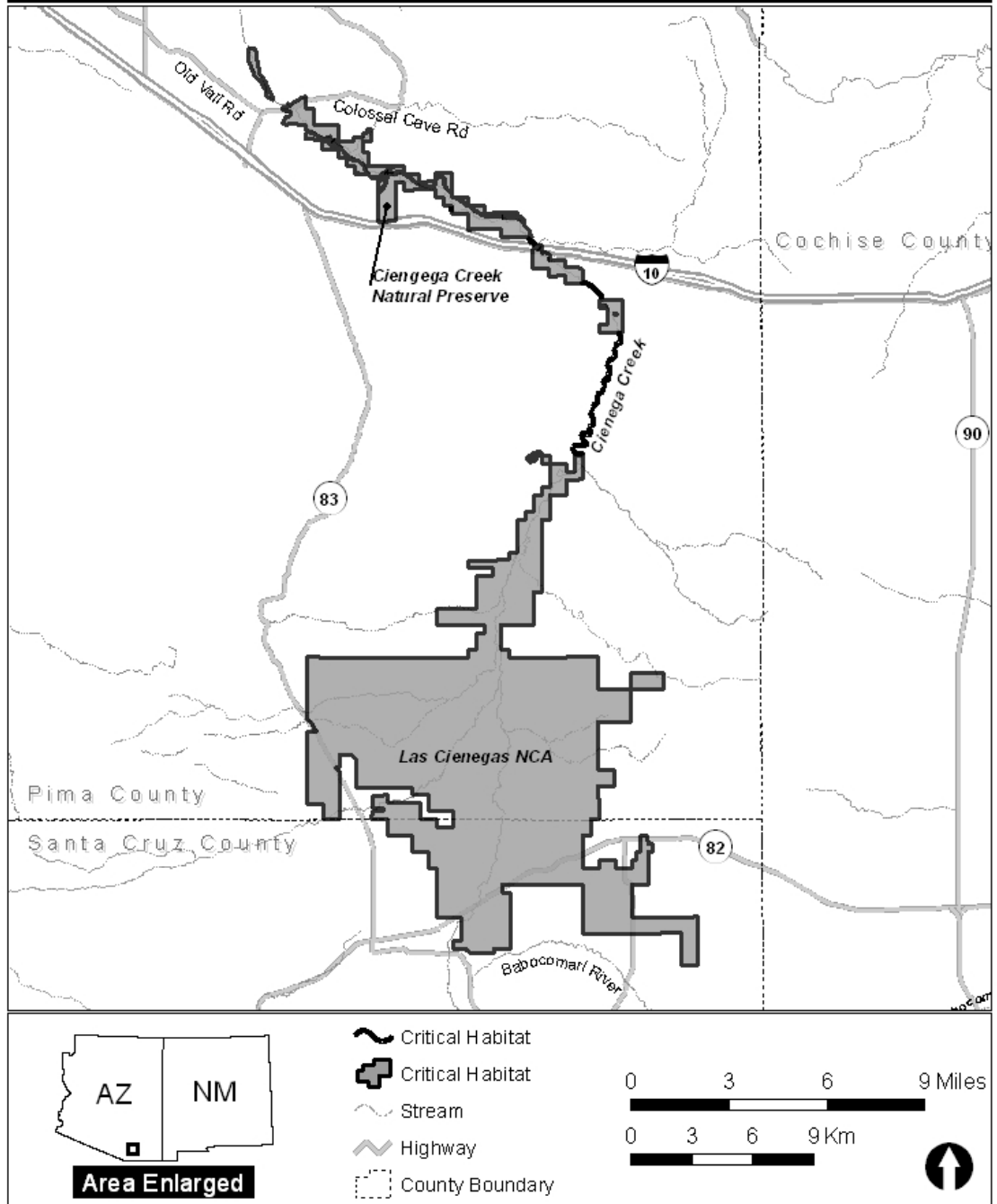
(15) Buenos Aires National Wildlife Refuge Unit: Pima County, AZ. Map of the Buenos Aires National Wildlife Refuge Unit follows:

# Northern Mexican Gartersnake Critical Habitat Buenos Aires National Wildlife Refuge Unit



(16) Cienega Creek Subbasin Unit: Pima and Santa Cruz Counties, AZ. Map of the Cienega Creek Subbasin Unit follows:

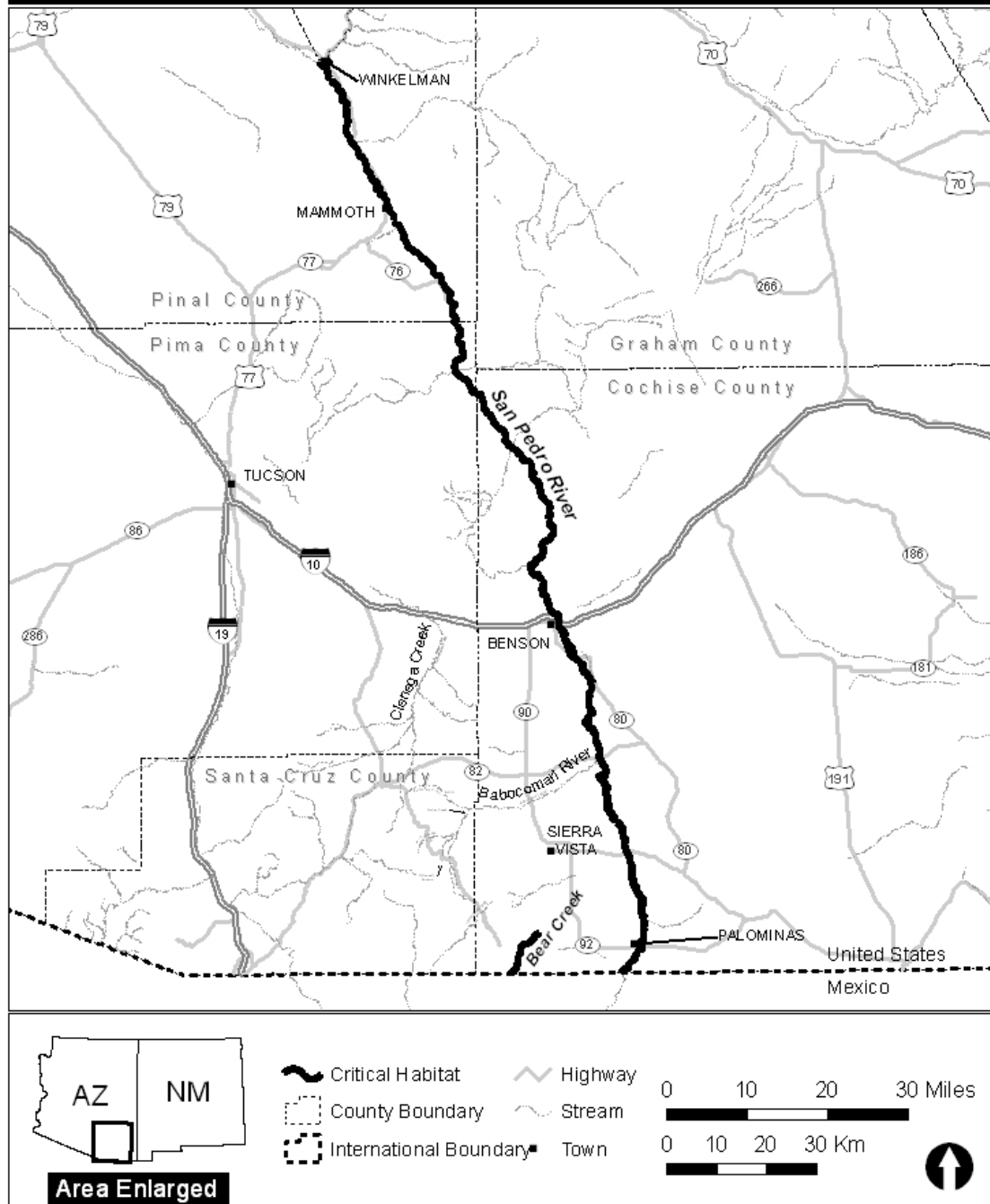
# Northern Mexican Gartersnake Critical Habitat Cienega Creek Subbasin Unit



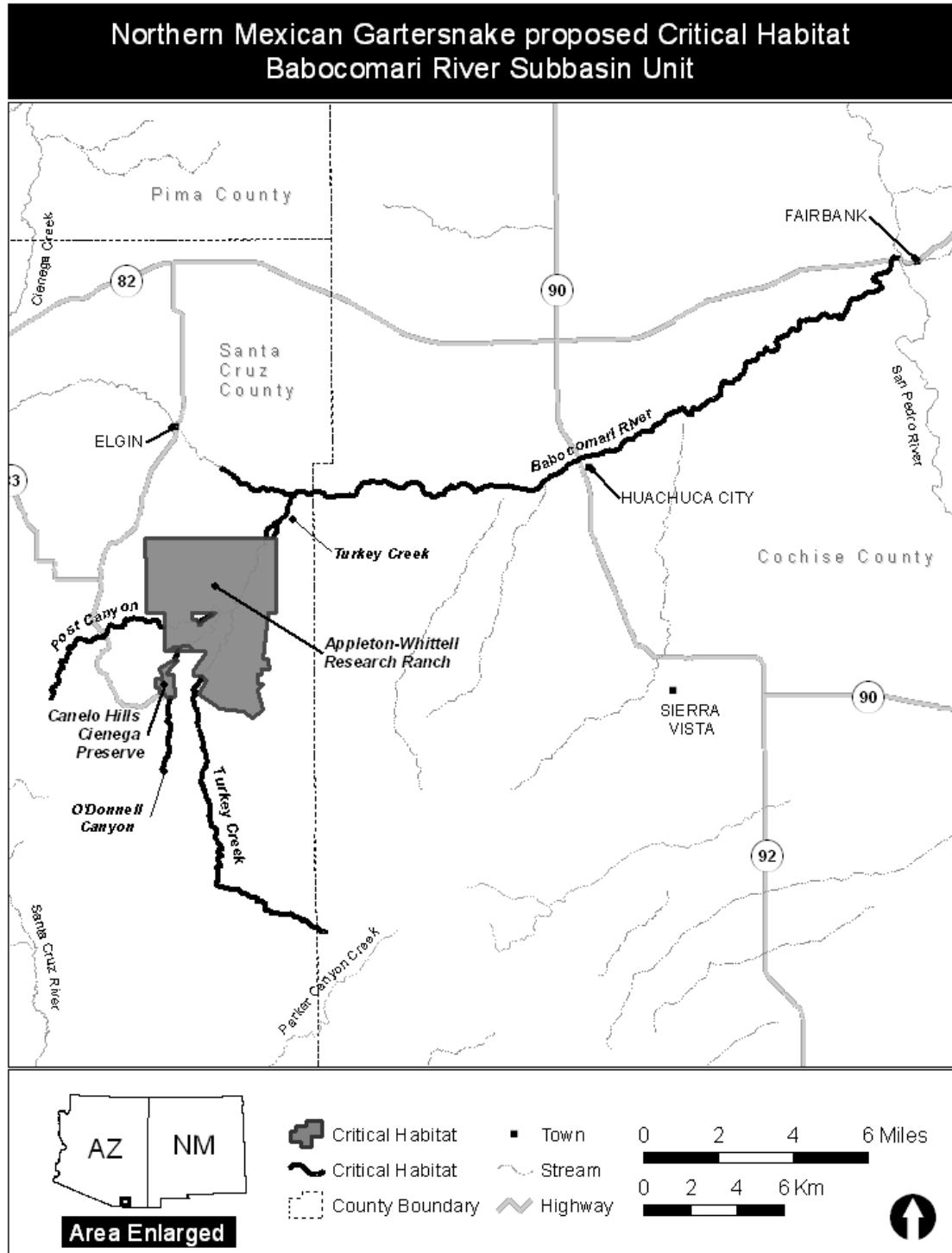
(17) San Pedro River Subbasin Unit: Cochise, Pima, and Pinal Counties, AZ. Map of the San Pedro River Subbasin Unit follows:



# Northern Mexican Gartersnake Critical Habitat San Pedro River Subbasin Unit



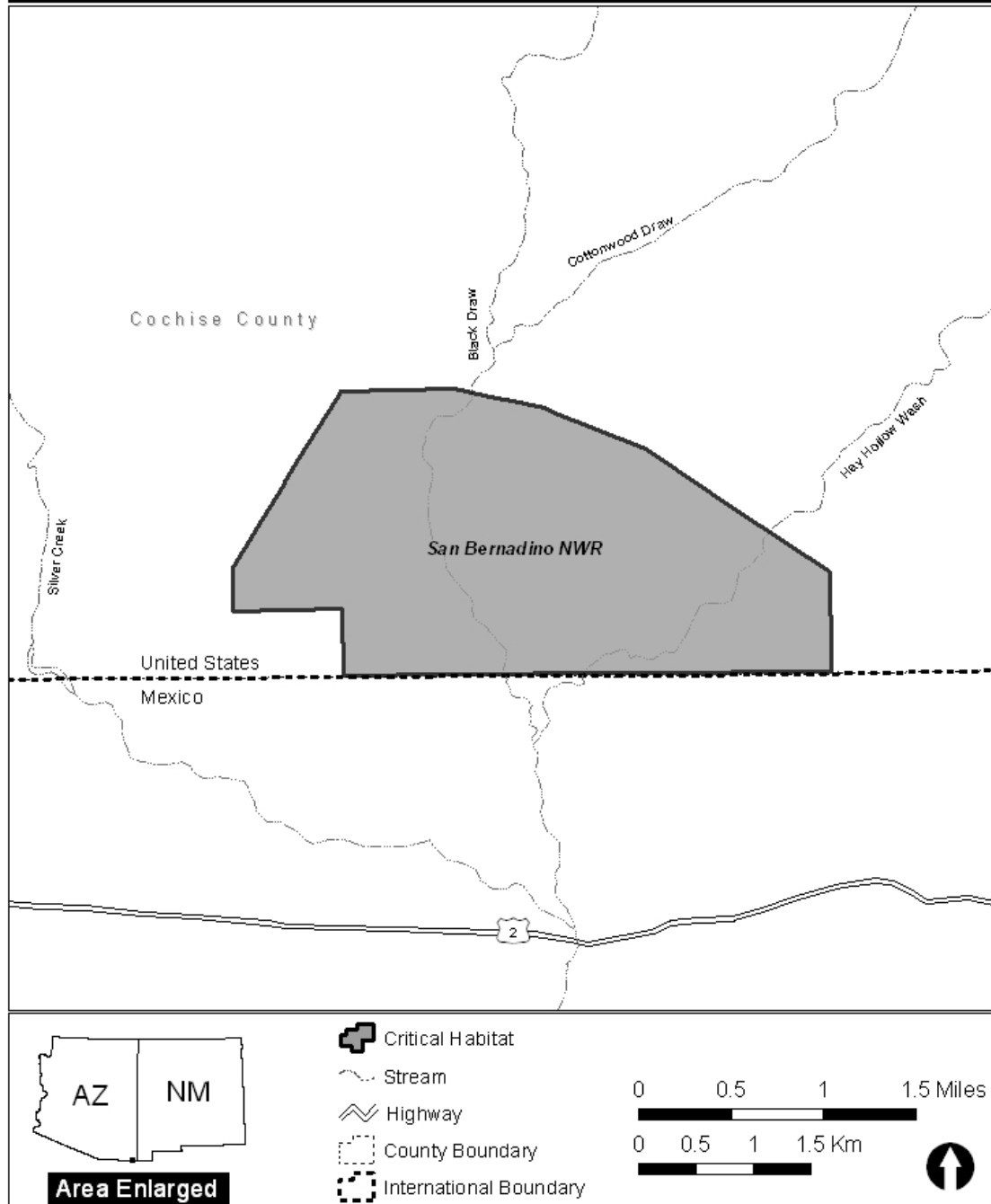
(18) Babocomari River Subbasin Unit: Santa Cruz and Cochise Counties, AZ. Map of the Babocomari River Subbasin Unit follows:



(19) San Bernardino National Wildlife Refuge Unit: Cochise County, AZ. Map of the

San Bernardino National Wildlife Refuge Unit follows:

# Northern Mexican Gartersnake Critical Habitat San Bernadino National Wildlife Refuge Unit



Narrow-headed Gartersnake (*Thamnophis rufipunctatus*)

(1) Critical habitat units are depicted for Greenlee, Graham, Apache, Yavapai, Navajo, Gila, and Coconino Counties in Arizona, as well as in Grant, Hidalgo, Sierra, and Catron Counties in New Mexico, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the narrow-headed gartersnake consist of four components:

(i) Stream habitat, which includes:

(A) Perennial or spatially intermittent streams with sand, cobble, and boulder substrate and low or moderate amounts of fine sediment and substrate embeddedness, and that possess appropriate amounts of pool, riffle, and run habitat to sustain native fish populations;

(B) A natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads;

(C) Shoreline habitat with adequate organic and inorganic structural complexity (e.g., boulders, cobble bars, vegetation, and organic debris such as downed trees or logs, debris jams), with appropriate amounts of shrub- and sapling-sized plants to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities; and

(D) Aquatic habitat with no pollutants or, if pollutants are present, levels that do not affect survival of any age class of the narrow-headed gartersnake or the maintenance of prey populations.

(ii) Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation.

(iii) A prey base consisting of viable populations of native fish species or soft-rayed nonnative fish species.

(iv) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of narrow-headed gartersnakes and maintenance of viable native fish or soft-rayed nonnative fish populations (prey) is still occurring.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

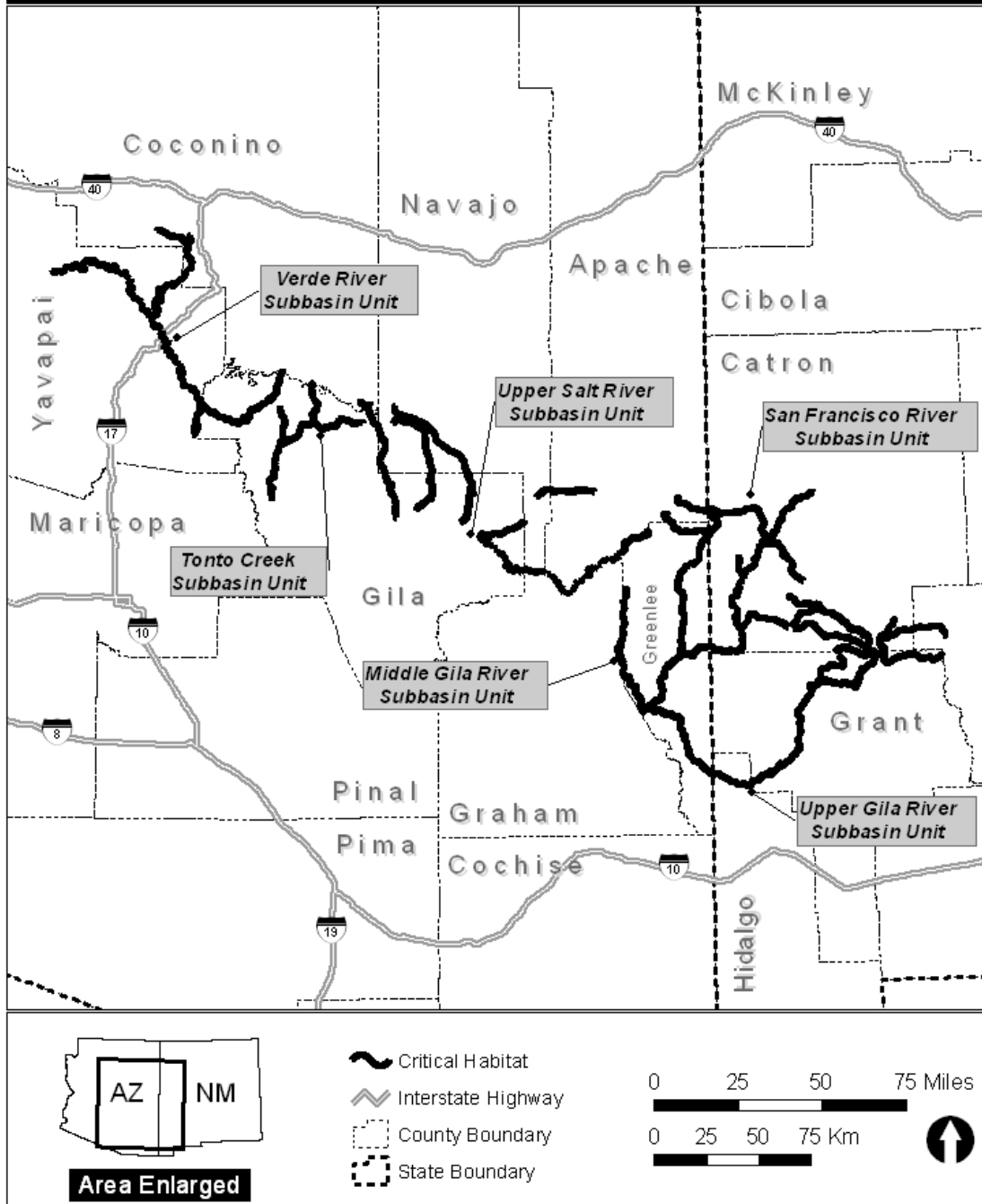
(4) *Critical habitat map units.* Data layers defining map units were created on a base of USGS 7.5' quadrangles, the Service's online Lands Mapper, the U.S. Geological Survey National Hydrography Dataset, and imagery from Google Earth. Line locations for lotic streams (flowing water) and drainages are depicted as the "Flowline" feature class from the National Hydrography Dataset geodatabase. Administrative boundaries for Arizona and New Mexico were obtained from the Arizona Land Resource Information Service and New Mexico Resource Geographic Information System, respectively. This includes the most current (as of the effective date of this rule) geospatial data available for land ownership, counties, States, and streets.

Locations depicting critical habitat are expressed as decimal degree latitude and longitude in the World Geographic Coordinate System projection using the 1984 datum (WGS84). Information on narrow-headed gartersnake localities was derived from survey forms, reports, publications, field notes, and other sources, all of which reside in our files at the Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021.

(5) Index map follows:

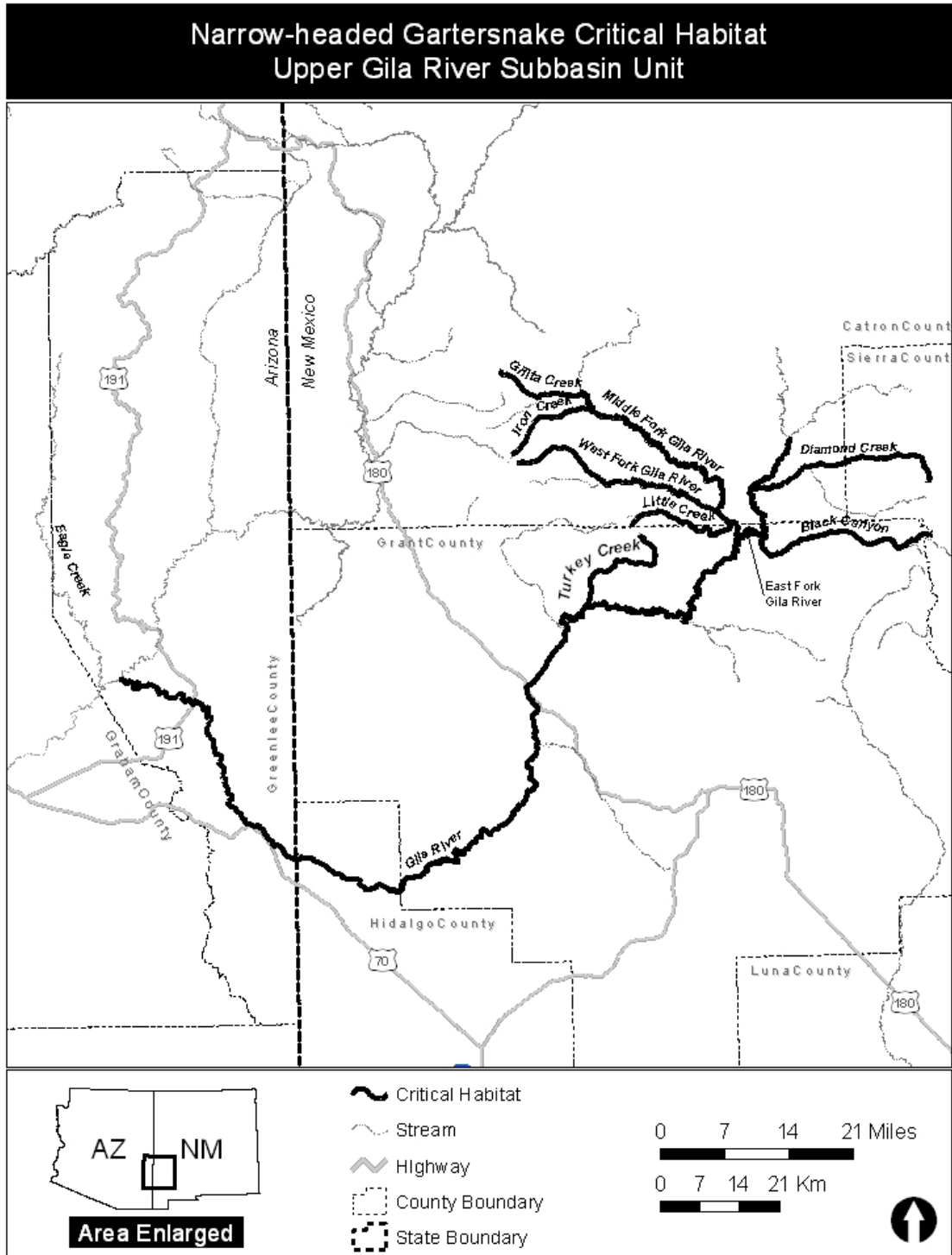


## Narrow-headed Gartersnake Critical Habitat Index Map



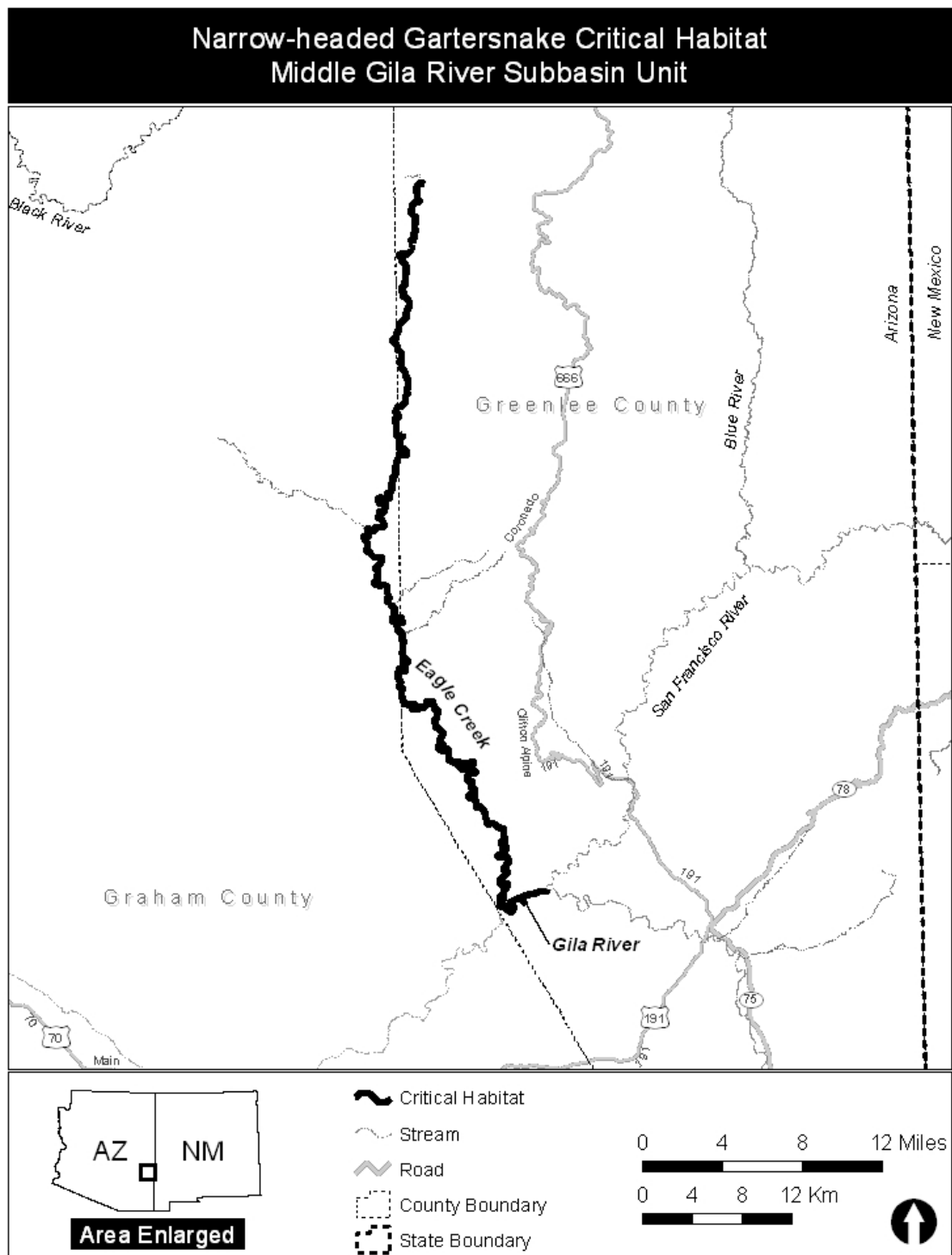


(6) Upper Gila River Subbasin Unit: Catron and Grant Counties, NM; Graham County, AZ. Map of the Upper Gila River Subbasin Unit follows:

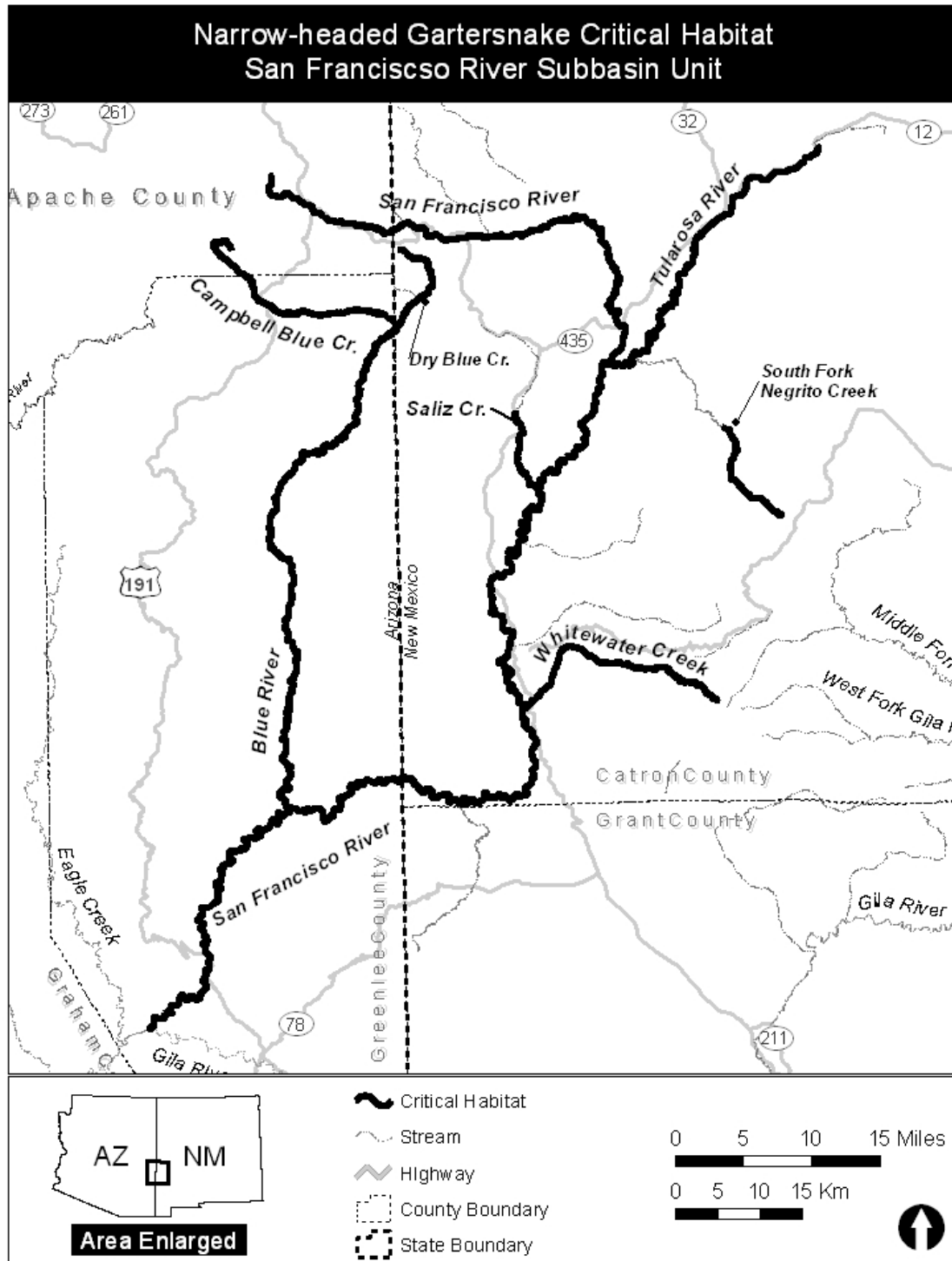


(7) Middle Gila River Subbasin Unit: Greenlee and Graham Counties, AZ. Map of the

Middle Gila River Subbasin Unit follows:



(8) San Francisco River Subbasin Unit: Greenlee County, AZ; Catron County, NM. Map of the San Francisco River Subbasin Unit follows:

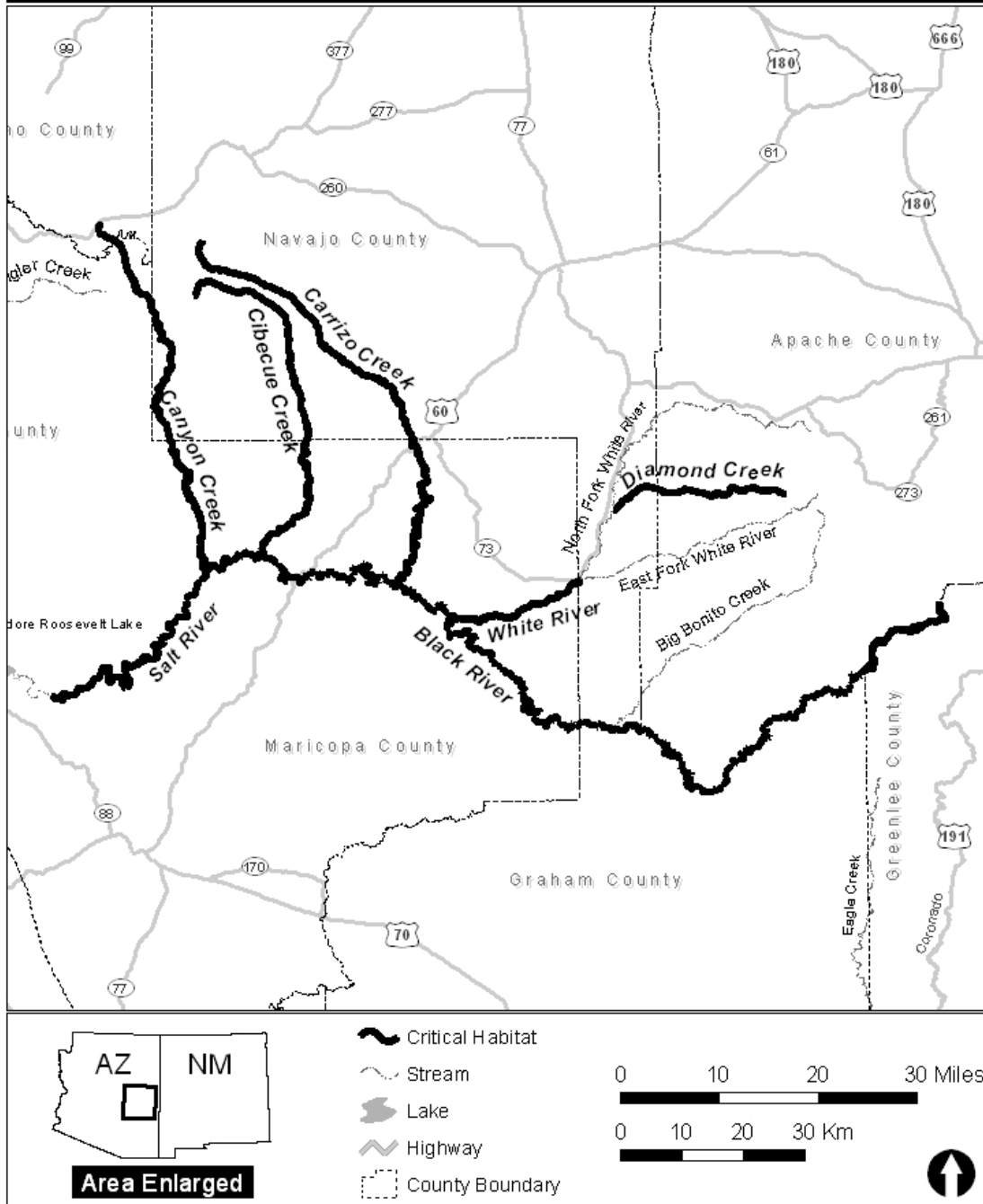


(9) Upper Salt River Subbasin Unit: Gila, Graham, Apache, Navajo, Greenlee, and

Coconino Counties, AZ. Map of the Upper Salt River Subbasin Unit  
follows:



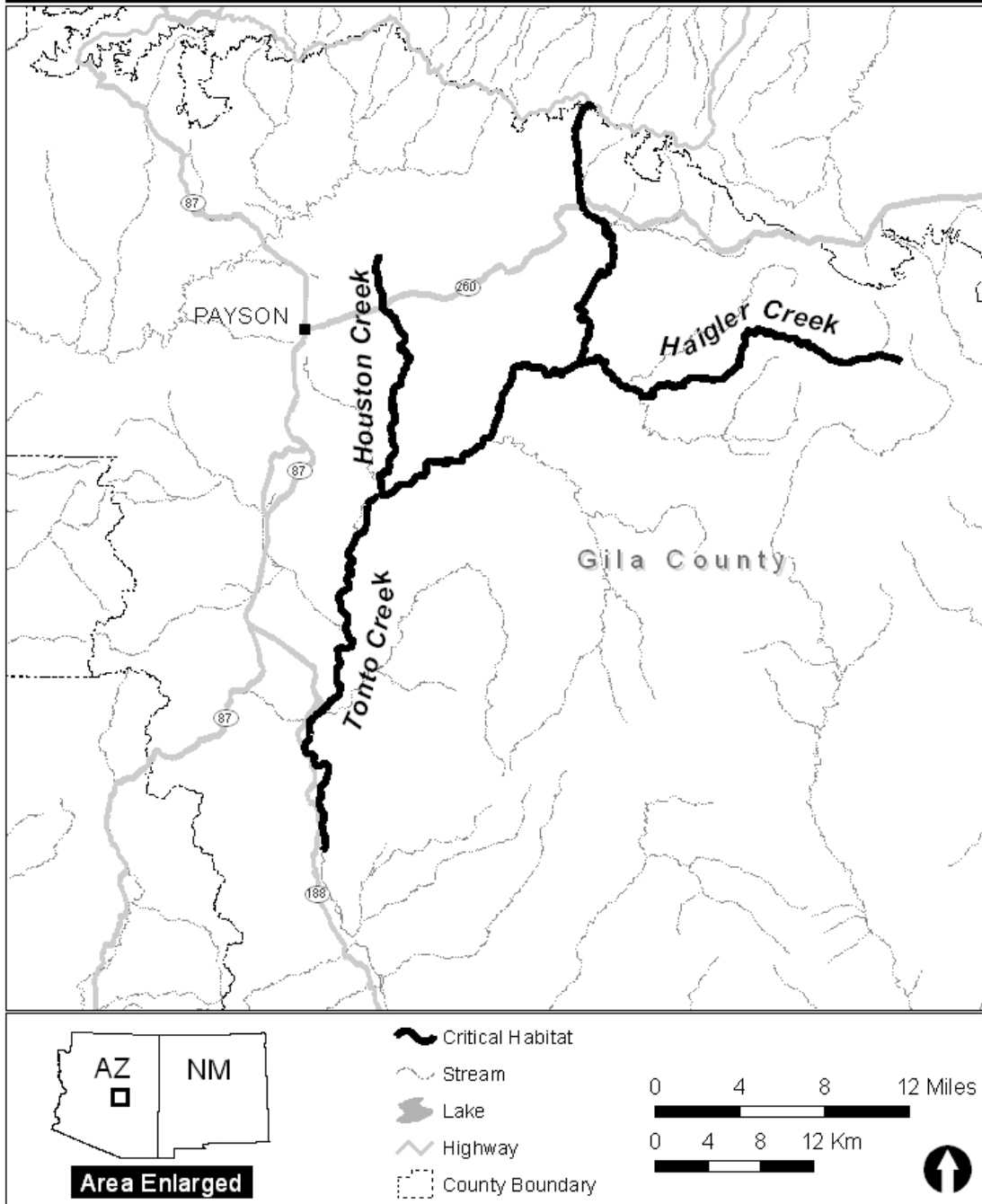
# Narrow-headed Gartersnake Critical Habitat Upper Salt River Subbasin Unit



(10) Tonto Creek Subbasin Unit: Gila County, AZ. Map of the Tonto Creek Subbasin

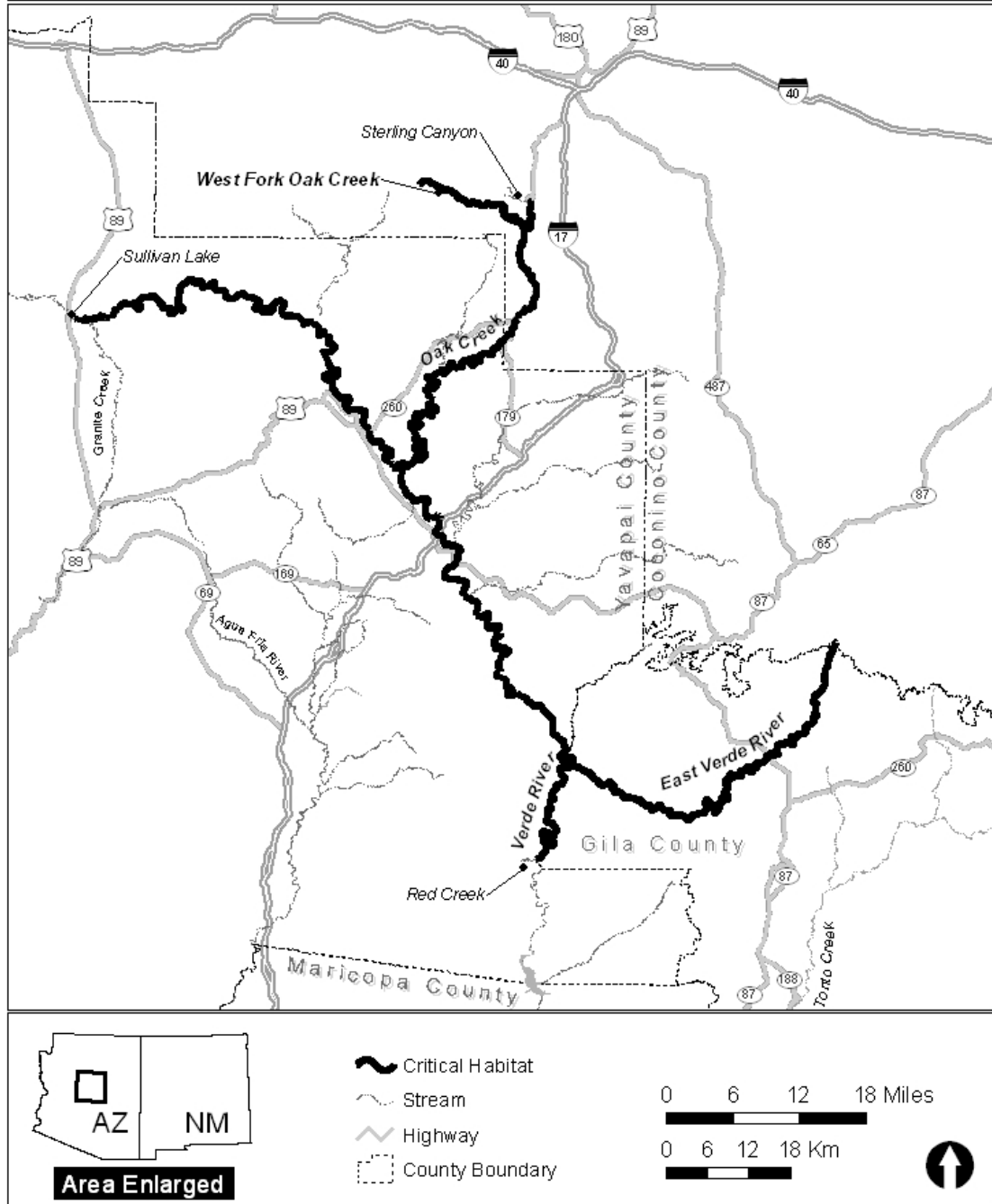
Unit follows:

Narrow-headed Gartersnake Critical Habitat  
Tonto Creek Subbasin Unit



(11) Verde River Subbasin Unit: Coconino, Gila, and Yavapai Counties, AZ. Map of the Verde River Subbasin Unit follows:

# Narrow-headed Gartersnake Critical Habitat Verde River Subbasin Unit



\* \* \* \* \*

Dated: June 25, 2013

Rachel Jacobsen

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P

